

**PUBLIC EXPENDITURE REVIEW OF THE FEDERAL GOVERNMENT
ON THE ROAD SECTOR**

MOSCOW-2001

**The Report was prepared by the Fiscal Policy Center sponsored by USAID
Contract OUT-PER-I-00-99-00003-00**

Table of Contents

Section 1.....	4
Introduction	4
Section 2.....	5
Role of Government in Supporting Road Sector Programs: Reasonable Scope of Support.	
Role of Regions and Private Sector.....	5
Role of Government as Provider of Public Goods in General and Roads in Particular	5
Types of Automobile Roads in the Russian Federation. – Classification by Ownership and Affiliation to Public, Collective or Private Goods	6
Scope of Government Support to the Road Sector.....	7
Criteria for Funds Distribution among Budgetary Functions.....	9
Selection of Road Sector Investment Projects to Be Financed from Federal Budget	9
Road Sector Maintenance: Delimitation of Responsibilities Between the Federal Center and the Regions. Equalization Problem	11
Development of Toll Roads.....	16
Conclusions	18
Recommendations	19
Section 3.....	20
Review of Budgetary Expenditures on Road Sector	20
Sources of Information	20
Structure of Budgetary Expenditures on the Road Sector.....	21
Maintenance and Repairs of Existing Federal Road Network	22
Construction and Improvement of Federal Automobile Roads.....	27
Allocation of Subventions and Grants to the RF Subjects for Development, Maintenance and Repairs of Public Roads	34
Subventions, Subsidies and Grants to RF Subjects	34
Conclusions	38
Recommendations	39
Section 4.....	42
Budgetary Process in the Road Sector.....	42
Regional Roads Funding Sources.....	44
The most important of the above documents are reviewed below.	54
Conclusions	60
Recommendations	61
Section 5.....	63
Budgetary Expenditure Policy in the Road Sector: Main Components for Greater Effectiveness.....	63

Section 1

Introduction

- 1.1. This Final Report on Public Expenditure Review of the Federal Government on the Road Sector was prepared by the consultants of the Fiscal Policy Center in accordance with the Terms of Reference coordinated with the World Bank and the USAID and approved by the RF Ministry of Finance.
- 1.2. The Ministry's interest in a profound analysis of the current situation in the road sector, on the one hand, and temporal and financial restrictions, on the other, were the reasons why the standard format of a sectoral PER recommended by the World Bank was modified in accordance with the preliminary agreement of the above organizations.
- 1.3. Accordingly, the FPC consultants had the following assignments: (i) analysis of key issues of road financing in the Russian Federation and (ii) development of recommendations to improve financing efficiency of the road sector. While approaching these goals, the consultants were recommended to pay especial attention to the following urgent issues that were, as a rule included into an abridged version of the Public Expenditure Review.
 - to provide a critical analysis of the current priorities and the road sector financing policy; to identify the discrepancies between the announced and actual policies and suggest the necessary improvements;
 - to recommend measures allowing for a more justified allocation of budget resources for investments and automobile road maintenance;
 - to recommend and substantiate a list of expenditure items and areas where road financing can be cut/stopped as early as 2002 without harmful social and economic consequences (or with minimum losses);
 - to propose measures aimed at greater effect from using budget resources designated for road financing in the budget of 2002 and at finding new financial sources.
- 1.4. In addition to this, the consultants were able to include into the Review a more detailed analysis of some issues regarding transportation and road maintenance in order to provide assistance to the relevant authorities (RF Government, Ministry of Finance, Ministry of Transport, Ministry of Economic Development and Trade) with making medium- and long-term decisions.
- 1.5. In particular, the tasks accomplished by the consultants also included the following: (i) proposals on changing the budgetary process with regard to road expenditures financing; (ii) recommendations on using such indicators as road expenditures efficiency and effectiveness for the purposes of federal budgetary planning and executing, (iii) recommendations on institutional and structural changes in the road sector, and (iv)

proposals on major changes in the financial support practices vis-à-vis territorial road funds/RF subjects (in connection with transport and road expenditures).

- 1.6. In the future, the work performed by the consultants can be used for a full-scale review of the situation in the transport sector to form the basis for a strategic document to be developed by the RF Government with regard to the problems of transport as a whole and the program for its reforming rather than only financing issues. Such sectoral analysis can be performed as part of the current World Bank Russia Urban Transport Project.
- 1.7. The preliminary (interim) report headed Public Expenditure Review of the Federal Government on Transportation: Road Sector, Northern Airports, Inland Commercial Waterways and Icebreaker Fleet was submitted in April 2001 and discussed at a workshop in May that took place in the Moscow office of the World Bank and was attended by its representatives and those of the Ministry of Finance. Recommendations, comments and proposals elaborated during the discussion were taken into account while drafting the Final Report.

Section 2

Role of Government in Supporting Road Sector Programs: Reasonable Scope of Support. Role of Regions and Private Sector

Some people even go so far as to justify the very existence of the government on the ground that someone has to fashion highway rules and that the government seems to be the only candidate.

Walter Block, Free Market Transportation: Denationalizing the Roads.

- 2.1. This Section will discuss the necessity of government support to the road sector and the reasonable scope thereof; preferable forms of government involvement in such specific areas as maintenance of the current federal and regional automobile road networks and construction of new roads. The forms and ways of state assistance to the road sector should be selected on the basis of rational delimitation of the rights and responsibilities between the different levels of government, between the public (state) and private sectors.

Role of Government as Provider of Public Goods in General and Roads in Particular

- 2.2. It is customary to assume that the government in a market-oriented economy is responsible for two very important functions: first, it becomes the principal provider of public goods because market cannot produce them in sufficient amount, and second, the government smoothes over income inequality by supporting poor sections of the population. However, nowadays another approach has become increasingly prominent, namely that the government may not be the only provider of public services, basic infrastructure and other public goods (see Box 2.1).

One of the arguments for the private sector participation in public goods supplying is their heterogeneous nature, meaning that public goods may be of pure or mixed nature. By the former we mean national defense, legislation etc. They are absolute public goods, in other words they cannot be subdivided into a number of elements or private goods. The government has the sole responsibility for provision of absolute public goods. However, there are quite a number of cases when some elements of public goods that have characteristics of private goods can be isolated. In this case private companies can be charged with the responsibility of their rendering. Automobile roads are one of these examples.

- 2.3. The following explanations are typically provided in support of a widely spread practice of government involvement in rendering automobile road and infrastructure services. In most areas where there is no alternative to road transportation (especially when it comes to short-distance transportation) only government ownership can exclude possible monopolization of road operation and, consequently, rise in fares. The second reason is that of the economies of scale when embarking on road construction and the following market failure with no market price to balance supply and demand.
- 2.4. On the other hand, automobile roads being mixed public goods and the fact that many countries have toll road segments and concessioned facilities parallel with public road network make us to be more attentive to the scope of government involvement in the road sector.

Types of Automobile Roads in the Russian Federation. – Classification by Ownership and Affiliation to Public, Collective or Private Goods

- 2.5. In Russia, there are federal, regional public, municipal, departmental and private automobile roads. Federal public roads link the capital of the Russian Federation with foreign capitals, administrative centers and capitals of the RF subjects and the latter among themselves and with foreign capitals. These roads have national and strategic importance and are in federal ownership. The federal center is directly responsible for the federal road network improvement and development. Until the end of 2000, federal roads were financed only from the RF Federal Road Fund and later from the federal budget. Federal roads account for over 50% of automobile transportation work (mileage, freight, passenger and foreign trade turnover) carried out by automobiles belonging to enterprises, organizations and population. Their quality (pavement, number of lanes etc.), as a rule, is better than that of the rest of the roads.
- 2.6. The RF subjects own regional public automobile roads. They fall into the local public goods category because they are mainly used by enterprises and population of the respective region. Their improvement and development are the responsibility of the regions. Regional public roads receive financing from three sources: (1) regional road funds of the RF subjects, (2) regional budgets, and (3) subventions and grants formerly provided from the Federal Road Fund and now from the federal budget. The formal

objective of financing from the third source is the equalization of the economic development of the regions in terms of the road infrastructure creation and maintenance.¹

- 2.7. Municipal roads are in the ownership of cities and other municipalities and are financed by local budgets. Like regional public roads they also belong to the category of local goods. Apart from local budgets regional governments also subsidize them.
- 2.8. Departmental and private roads belong to collective public goods as their services are provided to a comparatively small group of users. This category includes roads of organizations, collective farms, and state collective farms, farmers, businessmen and their associations who use them for their technological, departmental or private needs. As a rule, departmental and private roads are in the jurisdiction of the above entities that provide funds for their development and maintenance. Private roads of new rural (suburban) developers constitute a rather new phenomenon in Russia. The problem of their registration and inclusion into balance sheets of RF subjects and municipalities has becoming increasingly urgent in connection with the program under which rural roads are to be transferred into regional ownership and improved to meet quality standards. In order to be able to fulfill the program the regions will be allocated funds from the federal budget (this will be discussed further on in Section 3).
- 2.9. To maintain the road network in functioning state and to develop it, a rather large industrial complex is necessary. The public road sector in Russia is a heterogeneous conglomeration of properties, enterprises and organizations employing about 750,000 people. Organizations, enterprises and institutions comprising the complex are engaged not only in diagnostic surveys, research, design, construction, improvement, repair and maintenance of automobile roads and infrastructure but also carry out scientific research projects, train personnel, produce and repair road machinery, produce and process nonmetallic construction materials. Part of them are budgetary institutions financed from the federal budget under the item Federal Expenditures on Road Sector Support while the rest are state unitary enterprises. There are also many private companies whose orders are covered by the above federal budget item. The authors were not able to learn in detail about the industrial complex structure of the road sector and the public/private enterprise ratio (number of employees, amounts of federal budget funds spent on each type of enterprise etc.). That is why we shall refer only to the aggregate federal budget expenditures on the road sector, the only breakdown being into current and capital expenditures irrespective of the type of organization engaged in work (order) performance.

Scope of Government Support to the Road Sector

- 2.10. The importance of government finance as the main if not the only source of maintenance and expansion of the public road network has never been doubted in the Russian society. In most countries, including developed market economies, public automobile roads and

¹ A direct reference to this can be found in RF Law On Road Funds in the Russian Federation #1759-1 of October 18, 1991: "Subventions and grants may be provided from the above Fund [i.e. the Federal Road Fund] to equalize the development level of the network of those public automobile road in the territory of the Russian Federation that are owned by the RF subjects." This principle was also cited by the representatives of the Russian Road Agency (Rosavtodor) during the only meeting with the authors of this Report.

bridges are owned and by the government and financed from the national budget to a great extent.

- 2.11. In the Russian Federation, the federal budget spends more on support of the road sector than on the budget of practically any other federal ministry or agency, including the Ministry of Economic Development and Trade, Ministry of Industry, Science and Technology, Ministry of Health etc., the only exception being the Ministries of Finance and Education. The road sector support accounts for 2.8% of the expenditures of the federal budget for 2001.
- 2.12. Road expenditures were even greater when provided from the Federal Road Fund. Thus, in 2000 they reached 56.2 billion rubles as compared with 48.7 billion rubles designated for the road sector in the federal budget for 2001, or 6% of total expenditures authorized by the federal budget of 2000 (including the resources of the Federal Road Fund). (It is interesting to note that the FRF's expenditures in 2000 practically coincided with the projected budget deficit in that year). The only entity that had the right to dispose of the FRF's resources was the Federal Road Service later reorganized into the Russian Road Agency (Rosavtodor). Funds accumulated in the FRF were allocated for federal road construction and maintenance and for subsidies to the regions. Targeted use of those funds had practically never been tracked.
- 2.13. Investment programs account for the greatest portion of federal capital spending for which the Federal Road Fund was responsible until 2000 and later the federal budget. Since the current budget classification does not allow for a precise assessment of capital expenditures envisaged by the federal budget (due to specifics of overhaul expenditure accounting), we shall refer to the estimations made by the World Bank specialists (see Table 2.1) who used budgetary statistics and the State Statistics Committee data.

Table 2.1. Federal Budget Capital Expenditures (bln. rubles)

	1999	2000	2001 (plan)
Road sector investments	25.0	32.4	32.5
Federal targeted investment programs	7.1	21.2	28.1
Regional Development Fund	1.5	2.1	3.3
Other expenditures:			
Capital expenditures within Government Support to Coal Industry Program		1.6	8.2
Capital expenditures on agriculture			3.3

Source: World Bank estimations in: Towards Improving the Efficiency of Public Investment Expenditures. World Bank Report. May 2, 2000

- 2.14. Pursuant to the Federal Law On Enactment of Part 2 of the Tax Code of the Russian Federation and Making Amendments to Some Tax Regulations of the Russian Federation, RF Law On Road Funds in the Russian Federation №1759-1 of October 18,

1991, will become invalid from January 1, 2003.² The annulment of road funds will radically change the situation with road financing. Accordingly, the following issues will need to be considered: (i) When automobile roads start competing with other spending agencies for budgetary resources, what will be the criteria for distributing finances among them (in terms of the functional classification)? (ii) In the situation of strict budgetary constraints, in what way funds should be distributed among various areas in which support is provided to federal roads? (iii) What will be the impact of the changed funding system on the allocation of financing responsibilities to the governments of different levels? (iv) Should funds designated for territorial road construction purposes be included into the federal budget as a separate entry or should they be consolidated in the Regional Development Fund to be distributed to the regions according to general rules? (v) What are the prospects of attracting extra-budgetary funding into the road sector?

Criteria for Funds Distribution among Budgetary Functions

- 2.15. Selection of criteria by which funds should be allocated among various budgetary functions is one of the most difficult questions. It cannot be answered by analysing expenditure efficiency and budgetary process in an individual sector, viz., in the road sector in our case. Such criteria depend on the national development strategy and general budgeting principles that the Russian Federation will choose to adopt (incremental budgeting, performance budgeting, etc.).
- 2.16. Analysis of expenditure efficiency and the budgetary process in the road sector make it possible to improve the expenditure needs identification process and to allocate funds to different areas in which support is provided to the road sector. The relevant recommendations are placed in Sections 3 and 4. In this Section we shall restrict our consideration to possible methods and tools for selecting investment projects in the road sector funded from the federal budget.

Selection of Road Sector Investment Projects to Be Financed from Federal Budget

- 2.17. «Roads of Russia» Program. In the last few years, public automobile roads have been constructed and improved within the framework of the federal targeted program aimed at further development of automobile roads in the Russian Federation called Roads of Russia: 1995-2000. It assumed the status of a presidential program under Presidential Decree #1220 of December 6, 1995. Being a presidential program means not only that it is important but also that its investment projects do not need to go through the standard procedure of document submission and approval. Even the Head of the Federal Road Service had to admit that the procedures lacked openness.
- 2.18. The Roads of Russia Program (hereinafter: the Program) pointed out that it was designed out of necessity to develop the whole transportation network of the Russian Federation. Nevertheless, individual projects of the Program neither indicated their association with

² There is still quite a lot of discussion going on in other countries with respect to road funds (see Annex 1).

other transport networks development (rail, airways, water, sea) nor specified what other, more expensive transport projects they substituted.

- 2.19. Actually, the Program had not been co-ordinated even with the regional road network development programs. Some RF subjects do not have such programs even today. Besides, the Russian Road Agency did not adjust the main indicators of the Program to its changed financing.
- 2.20. The term of the Program was over in 2001. A new program, Roads of Russia of the 21st Century, is waiting its turn. It is to be financed from the federal budget rather than a dedicated fund, hence the need to improve the financing procedure of investment projects under realization. In order to make a choice about investments in public-sector projects in market economies they very often use a method based on weighting all costs and public benefits of a future project (cost-benefit analysis).
- 2.21. **Cost-benefit analysis.** The theory underlying estimation of public expenditure effectiveness using the cost-benefit analysis is rather transparent and raises no questions.³ Problems usually arise at the stage of its practical use. Thus, some leading road sector specialists examined the bridge and road reproduction investment projects with the help of the cost-benefit analysis. It turned out that the projects employed different, incompatible methods to measure their costs and benefits.⁴
- 2.22. On the other hand, the assessment issues of social and economic impacts of investments in the road sector were elaborated in special literature and, in particular, in methodological materials of the Ministry of Transport (see Annex 2). The developers of the Government Concept of Building and Development of the Automobile Road Network in the Russian Federation from the Federal Road Service are also acquainted with it.⁵ Evidently, the problem is not that drafters of feasibility studies lack methodological recommendations and guidelines but that the estimation of all costs and benefits is not obligatory and that the choice of government investment projects is not based on it. There is no doubt that if prospective government financed projects are selected by comparing their net discounted returns calculated on the basis of social costs and benefits, the cost-benefit analysis will be widely employed for decision-making.
- 2.23. Owing to the fact that after the FRF's consolidation into the federal budget there are more budgetary constraints with regard to financing road construction and improvement projects, criteria will be needed to prioritize those projects that are already under construction/improvement. This will be necessary to decide what projects should continue and what should be made lying idle when financing is cut. In the opinion of the FPC consultants such criteria might be as follows:

³ The basics of this method are described, among other things, in: Towards Improving the Efficiency of Public Investment Expenditures. World Bank Report. May 2, 2000.

⁴ E.V. Dinghis, A.I. Akulov, An Analysis of Methods of Feasibility Studies of Transport Infrastructure Reproduction (in Russian). Informavtodor, 2000.

⁵ Thus, Part 4 of the Concept, The Main Goals and Objectives of the Automobile Road Network Development, says that "the identification criterion for an automobile road project as well as a measure of achievement of its main objective should be the maximum size of the aggregate transport and other social and economic effects of the program". The attentive reader of Annex 1 will realize that what is meant here is actually the cost-benefit analysis.

- the degree of projects availability: those with the highest degree will be given the priority;
- co-financing of projects by international organizations, regional governments etc.;
- national (inter-regional) character of projects;
- realization efficiency: more effective projects will be chosen;⁶
- when choosing regional projects financed from the federal budget, quality of the existing road network should be taken into account and those regions with bad road maintenance performance should get no financing.

Road Sector Maintenance: Delimitation of Responsibilities Between the Federal Center and the Regions. Equalization Problem

- 2.24. The current delineation of road maintenance responsibilities is quite logical: the federal budget finances federal and strategically important roads; the budgets of the RF subjects provide funds for regional roads; municipalities are responsible for financing road maintenance in cities, settlements and the like.
- 2.25. Problems arise when it comes to the responsibility of the federal budget to equalize economic development of the regions with regard to construction and maintenance of the road infrastructure. Many things are not clear in this connection. First of all, what does it mean “to equalize the level of development of the automobile road network”? How can it be measured, in what units? Shall we use the road network length per capita or road density per 1 square km of territory? Rosavtodor specialists use both indicators to substantiate the needs in new roads. We can suggest another indicator: the length of road network per 1 mln rubles of GDP (GRP) created in the relevant territory because as a criteria for the road network development equalization it is no worse than the number of kilometers of traffic-bearing surface per capita.
- 2.21. Actually, the problem of equalization of regions (whatever criteria are used) would always break up into two parts: (1) equalization of regional fiscal capacities in terms of their current expenditure needs, and (2) equalization of their infrastructure capacities.
- 2.22. Let us consider first the issue of equalization of regional road maintenance expenditure needs. The only way to measure such needs is to use the length of the existing (that has already been built) road network. Automobile road maintenance expenditure needs are measured in kilometers, or more precisely, by length of road network (in terms of roads of standard width, quality etc, adjusted for appreciation or depreciation factors). This is a specific feature of roads that distinguishes them from most public services that have social character and are measured in the number of recipients (children of school age, old people, population size etc.). Later we shall see the influence of this feature on the formalized approach to the equalization problem. Right here it is important to note that Rosavtodor uses this very interpretation to substantiate road maintenance expenditure needs to the Ministry of Finance. It specifies the length of regional roads and their maintenance standard costs. It is accustomed to measure region’s own capacities for covering such expenditure needs by expected receipts of the RRF (this is a wrong

⁶ World Bank, op cit .

approach to be discussed later). Equalization in this case means that the Ministry of Finance covers fully or in part the difference between standard needs of the regions for regional road maintenance and expected receipts of the RRF.

- 2.23. Let us consider now capital expenditures (equalization of infrastructure capacities). We have not seen any genuine substantiation by Rosavtodor of the necessity to spend federal funds on construction of regional roads. But we know the principle underlying the formation of regional road network envisaged by the Government Concept of Building and Development of the Automobile Road Network in the Russian Federation, viz. “the equal access to the basic road network for all settlements of every region”. One of Rosavtodor’s arguments for allocation of more money from the federal budget of 2001 on road construction is that a great number of settlements in Russia (about 40, 000) do not have hard-surface approaches. It is estimated that some 12 to 18 mln people live there, which means that we are talking about settlements with the average number of residents ranging from 300 to 450 people. It goes without saying that ideally every small settlement should have a paved road of its own but right now we are talking about construction of roads as a public, not private good. Surely, there should be a borderline somewhere between public, collective and private goods.
- 2.24. Indeed, equalization of per capita social infrastructure capacities is one of the objectives of the federal center investing policy (see, e.g., the draft Federalism Development Program for 2001 – 2005, methodological recommendations on distribution of investment resources among the regions prepared by the Ministry of Economy (draft, 2000)). One may agree or disagree with the expediency of such political goal but at the same time one has to understand that roads do not belong to the social infrastructure facilities. They are primarily facilities of the production infrastructure (we can disregard the strategic component for the moment since we are talking about regional, not federal roads). The attitude to roads as a production infrastructure asset is quite obvious in the Explanatory Note to the Draft Federal Budget for 2001 prepared by Rosavtodor. It says, among other things, that “the real needs of the economy and regional development, growing number of privately owned and company cars make it necessary to complete construction road projects [federal roads are meant] as quickly as possible, which in its turn requires a considerable growth of construction expenditures”. The taxpayers that get road services are the enterprises whose tax payments should go for road construction.⁷ This does not mean, of course, that population does not use roads for their personal, other than production necessity purposes. Actually, people are very active in using roads that were constructed for the benefit of production. If this is true, then it is quite natural to ask the following question: Should the federal center equalize road infrastructure capacities of economic complexes (regional economies)? How should this capacity (need) be measured? Should the federal center withdraw tax collections from wealthy regions with developed economies, extensive road networks and highly intensive traffic and redistribute them to poor regions with backward economies, few roads and low traffic

⁷ Automobiles in Russia account for the greatest share of freight transportation: roads carry 80% of all cargo weight in the country. However, these are mostly short-distance carriages, hence the share of automobile transportation in the total freight traffic is a mere 6%. Some 60% of inter-city passengers are carried by automobiles and buses, while inter-city passenger transportation accounts for a tiny share in passenger services (0.6%). Intra-city and commuter traffic is responsible for the main portion of passenger flows. We have not been able to determine the exact ratio of cargo and passenger road transportation in Russia but according to some information about 50% are truck transportation, which is by order of magnitude greater than in Europe. Besides passenger transportation is to a great extent represented by commuter services, i.e. is directly caused by production necessity. However, we do not have exact data to support this thesis.

flow? Or should it act in the opposite direction: take road tax collections away from poor regions with weak traffic and forward them to wealthy regions where the need in roads is greater?

- 2.25. It seems that neither of the above options is acceptable. Actually, growing economy hindered by low traffic capacity should be able to pay for road construction without any assistance from the federal center. It is difficult to explain why regional road construction projects need federal involvement. It is often argued that regional economies need some development impetus to be followed, hopefully, by multiplicative effect (see, e.g. *A Research of Some Issues of the Road Sector Financing in the Russian Federation*, Moscow, Inzhdotservis, 1997, p. 136 [in Russian]). It is doubtful that there is a direct connection between the density or length of the road network and the economic development (GRP) of a region. Thus, the density of automobile roads in such wealthy regions as Khanty-Mansi and Yamal-Nenets AOs is very low, but since these are oil producing regions they depend on pipelines rather than automobile roads for transportation of oil.
- 2.26. Pipelines hold the first place in the freight turnover in Russia but this is a highly specialized transport. The second place as far as freight transportation is concerned is occupied by the railroads. This is explained by the regularity of transportation, high speed and ability to handle large volumes of cargo and passenger long-distance traffic. On the other hand, the strong point of the automobile transport is that it can carry cargoes quickly and for short distances. Its distinguishing features are high capital intensiveness and energy consumption. The greater portion of intra-regional transportation services (cargo delivery to railway stations, river wharves, delivery to consumers) is provided by automobile transport. In the northern and eastern parts of the country with practically no other kinds of ground transport long-distance inter-regional transportation is carried out by automobiles; however, federal rather than regional roads are used for this purpose.
- 2.27. Accordingly, each kind of transport occupies its own niche in the national transport system and the automobile transport is no exception. On the one hand, the federal budget does not subsidize the development of pipeline transport and provides practically no support for the railway transport. On the other hand, it considers it necessary to co-finance construction of intra-regional roads.
- 2.28. The following arguments can be offered in favor of the government's participation in construction of intra-regional roads:

First argument. In a situation when the credit system is not developed and road-construction projects are capital-intensive, the regions cannot mobilize the necessary amount of funds without federal assistance. This is a serious argument one has to agree with but it does not explain why federal funds should be given on a cost-free basis. If the construction project in question is economically sound then its commissioning will liquidate a bottleneck in the region's economy and the region will be able to collect more taxes out of which it will reimburse the costs of the project within a specified period. In case this cannot be done the project is not worse pursuing.

Second argument. The development of territorial road networks creates socially useful externalities. True enough, such externalities do exist: any communications network, transport network as well, will be the more useful for the society the more points it connects. In other words, the usefulness of regional roads directly depends on the number of regional roads linked with them. The effectiveness of federal roads can be increased by developing the subnational road network.

This is an important argument favoring the federal center's participation in regional road construction projects. However, it does not deny the necessity to consider such projects among others aimed at supporting social and economic development of the RF subjects. From this point of view it is interesting to turn to the third (social) argument, which, at first glance, should guarantee the preferential financial status to road projects.

Third argument (social). Basically, it amounts to the following: people cannot come to raion centers for medical treatment, or fire brigades cannot reach certain settlements. But the state cannot guarantee to every citizen the possibility to reach a hospital by a motor road or to extinguish fire by a motorized fire brigade. Probably it would be advisable to provide remote and difficult-of-access settlements with radio and telephone communications instead of constructing and maintaining a road to each of such settlements. This issue is closely connected with the one mentioned earlier, namely, whether roads are an element of the production or social infrastructure.

The final, most important argument. There is a strong expectation in the society that the government must ensure both social and economic equalization and provide assistance not only to socially unprotected population but also to enterprises that find themselves in difficult circumstances and to industrially underdeveloped regions that lack a road infrastructure. Under the circumstances, it is rather difficult to refuse the regions in funds for territorial roads.

- 2.29. This does not mean that the federal center should stop co-finance regional investment projects altogether but from now on regional road construction projects should compete with other projects for federal financing and face single selection criteria. Accordingly, any references to the necessity of the road capacity equalization will no longer be relevant.
- 2.30. The last issue to be mentioned here is connected with the actual equalization practice. When the government distributes transfers from the Fund for Financial Support of Regions (FFSR) it equalizes fiscal capacities of the regions. But does it really equalize the economic development levels of the regions by distributing capital transfers? Or, more correctly, does the investment support of the federal center reach the poorest regions or are the wealthiest regions among its recipients? According to the World Bank report, these are the wealthy regions that enjoy the preferential treatment. A similar situation is with distribution of investments for territorial road construction purposes. Here the bias to the wealthy regions is even more evident than is the case with investment resources in general.

On the bias of road capacity equalization in favor of wealthy regions

Five regions with the highest gross regional product (GRP) – City of Moscow, Khanty-Mansi AO, Saint-Petersburg, Moscow Oblast and Sverdlovsk Oblast – account for 30% of all funds allocated in the 2001 federal budget for the government support to the regional road network. On the other hand, only 0.6% of the federal budget funds dedicated for such purposes will be spent in five regions with the lowest GRP: Ust-Orda Buryat AO, Komi-Perm AO, Taimyr AO and Aginsk Buryat AO and Evenk AO. Hence, we have an asymmetrical distribution of “road support” favoring wealthy regions (data for 2001). Such policy is in rather poor agreement both with the announced objective of the government (“equalization of the road network development level”) and with the distribution policy of the FFSR resources. Compare the following figures: 5 regions with the highest GRP account for only 0.5% of financial support from the FFSR (data for 2001). Out of these five, the only region to receive FFSR transfers is Moscow Oblast that has high GRP and a great number of population, which is the reason why it receives FFSR transfers distributed at per capita basis.

- 2.31. We see that in spite of the officially declared economic equalization policy as a whole and the development of the regional road network in particular, in practice the federal center provides support to the wealthy regions rather than the poor ones. Of course, one may ask about the necessity of capital transfer distribution, arguing that FFSR transfers are quite enough. But such formulation of the problem will take us far away from the road sector issues. In any case it is clear that the policy of capital transfer allocation should be coordinated with that of general-purpose transfer distribution from the FFSR. Right now the government policy under which funds are redistributed from the wealthy regions to the poor thus cutting the investment capacity of the wealthy regions, which is followed by returning some of the resources in form of government co-financing of capital projects appears to be ineffective.
- 2.32. Consequently, a formal refusal on the part of the government to go on with the policy of road capacity equalization would only fix the status quo because its current policy in this direction has very little to do with real equalization. The present document does not deal with the criteria that should be used for identification of regional investment projects. The only thing that should be mentioned in this connection is that one of the criteria for selecting infrastructure investment projects (whether social or production) should be the quality of the available infrastructure maintenance or guarantees (to be provided by the regions) of standard quality maintenance of newly constructed or improved networks covered from local (regional) budgets. This should be one of the necessary conditions for allocation of federal funds.
- 2.33. Currently, the federal center is not only co-financing construction of regional roads and facilities but also is allocating funds for their maintenance to those regions that lack own money. The lists of recipients under the two items, though not exactly matching, have nevertheless many common entities. In other words, the federal center provides money for construction and improvement of roads both in wealthy regions and in those where there are not enough own funds to maintain existing roads.
- 2.34. There is one more question that needs to be decided: What is meant by “own” road construction resources of the regions? – The regions understand that these are the resources of territorial road funds though nobody prohibits them, in case of insufficient resources, to transfer there money from the regional budgets or to use money of the

regional governments for road construction. The practice has shown, however, that resources of the Federal Road Fund have been often used to provide grants for regional road maintenance, while money from territorial road funds have been directed for other purposes with no connection to roads (see Section 3).

- 2.35. Liquidation of the Federal Road Fund and the forthcoming abolishment of territorial road funds will make it possible to reevaluate not only the federal - regional budget relationship mechanism in terms of the road sector financing but the expediency of the public road capacity equalization in the Russian Federation as well. Viewed as a strategic goal, the equalization of road networks does not seem necessary, at least at first glance.

Development of Toll Roads

- 2.36. In 1999, Russia had 55 km of toll roads (as compared with 8000 km of toll road sections in the USA, 9000 km in France, 7900 km in Japan and 5100 km in Italy). Prospective cuts in federal financing of the road sector have revived the interest in toll roads construction and operation. The first federal legislation to provide an opportunity for construction of toll roads in Russia dates to 1992.⁸ In 1999, Decision of the Government of the Russian Federation # 973 was issued: On the Endorsement of the Provisional Rules for Arranging the Operation of Federal Automobile Toll Roads and Facilities and Provisional Rules for Determining Toll Rates for Travelling along Toll Automobile Roads and Facilities and for Using Collected Tolls. It follows from the title that tolls are to be introduced only for using some sections of federal roads. Presumably, those are the sections where private investors are able to pay back their expenses on road construction and receive profits during the concession period. The reasoning is quite sound since it is typical for federal roads to move maximum cargo and passenger traffic and, consequently, to be attractive to possible investors.
- 2.37. Let us have a look at the practical implementation of such projects in Russia. The first toll road facility to be constructed was the bridge over Don River in Tambov Oblast (1993). After seven years of commercial operation the amount of collected tolls was enough to compensate about 30% of its maintenance costs. A toll section of Voronezh – Tambov road was set up three years after its construction

in the vicinity of the City of Tambov. In spite of the fact that many mistakes of the first toll project had been taken into account, only 40% of the maintenance costs were covered by toll payments. Later some other toll projects were realized (toll bridges over rivers in the cities of Barnaul and Voronezh, Saratov toll conduit and another one, bypassing Khlevnoye Raion center in Lipetsk Oblast). However, no one of the above projects had repaid its construction costs. Currently, several other toll bridges and sections of federal roads are considered for construction. It should be borne in mind in this connection that any prospective investor will have to face the following problems that arise from the provisions and procedure of the above Decision of the RF Government:

⁸ Decree of the RF President # 1557 of December 8, 1992, On Construction and Operation of Automobile Roads on the Commercial Basis, is currently invalid.

- 1) Pursuant to the current federal legislation, automobile roads and property that is necessary for road infrastructure functioning are transferred into operative management of the state bodies of automobile roads management. Hence, there are doubts about the legality of possible concession granting of any road facility by such bodies because the RF Civil Code does not envisage the right of disposition of facilities under operative management.
- 2) In spite of the concession bidding procedure envisaged for identification of organizations to be granted concessions on automobile roads and infrastructure, the Decision specifies that the bidding process is not necessary for organizations within the jurisdiction of the Russian Road Agency. Thus, some bidders are denied equal opportunities from the very beginning.
- 3) The Decision envisages a long agreement process for toll-based operation of road sections and infrastructure projects with the following agencies:
 - Ministry of State Property,
 - RF State Committee on Land Policy,
 - Ministry of the Interior,
 - Bodies of executive power of the RF subjects in whose territory a road or road facility to be transferred into toll-based operation is located.

The latter of the above items is of particular concern: Will the regional authorities be interested in a toll road in their jurisdiction if they receive no profit from it while protests of the local population are directed against them?

- 4) The Decision provides that “shift to toll-based operation of automobile roads and infrastructure may occur only after a set of measures for improvement of their transportation and operation conditions, better transportation environment and greater traffic safety have taken place”. However, it does not explain what these measures are and who is responsible for checking how the steps that have been taken comply with this provision.
- 5) Under one of the provisions of a future contract an upper limit of the share of profit should be specified that will be left at the disposal of the organization accepting roads and infrastructure as well as the procedure of using profit in the excess of such upper limit. From this it follows that in case of more intensive traffic on a toll road, one of the reasons being that the investor has provided additional funds for better transportation, additional profit will be received by anyone but the investor.
- 6) One of the investor’s liabilities under the contract is “to assume risks, including material liability” and to transfer, upon termination of the effective term of the contract, of the toll road (infrastructure facility) to the public road network “in a condition meeting the standards and norms of automobile road and road facility operation”. Should the standards and norms be made stricter after the commencement date of the contract, the investor will be the only party to bear all the resulting costs. Similar contract in other European countries provides for certain compensation in connection with greater costs on the part of the organization that is operating the toll road.
- 7) It is evident from the text of the Decision that the toll rate for travelling on the toll road (road facility) shall be set by Rosavtodor “taking into account the consumer demand”. For this purpose, full or *partial cover of costs* (in case the former is not possible) as well as profits of the operating organization should be taken into account. This means that a federal agency may set such a rate that will bring no profit and will not be enough to cover the project costs.

- 2.38. While summing up the above we have to admit that the current federal legislation on construction and operation of toll automobile roads and infrastructure predetermines their profitability for any party but the investor.⁹

Conclusions

1. Automobile roads fall into the mixed category of public goods, which means that they can be provided both by public and private sectors. Their strategic and national importance on the one hand and the economies of scale on the other are responsible for the fact that they are funded mostly by the state.
2. The forthcoming liquidation of the territorial road funds by 2003 will pose the following problems before the Ministry of Finance and the Ministry of Transport: (i) estimation of the total amount of financial support for the road sector; (ii) distribution of funds allocated for the maintenance and development of federal roads among expenditure functions (maintenance, construction and improvement of roads); (iii) distribution of funds designated for maintenance of regional roads across the regions and clear assignment of the road sector support responsibilities to the governments of different levels; (iv) consolidation of resources provided by the federal budget for road construction purposes in the Regional Development Fund and the latter's funds allocation to the regions on equal grounds; (v) attraction of private investors to the maintenance and construction of roads and infrastructure.
3. The main criteria for federal funds distribution among various spending agencies can be only the national development priorities. Therefore, it is impossible to elaborate universal rules (e.g., sharing rates from some revenue source, a share of the total revenue of the federal budget or something else) to be used for allocating support to individual socially important activities, the road sector in particular. However, the mechanisms used to determine such priorities could be developed and formalized.
4. The procedure of funds allocation to cover spending needs in various segments of the road sector, investment projects in particular, should also be improved. Currently, selection of federal road construction and improvement projects is a closed process that is not based on the cost/social benefit analysis though such analysis practices are available for the road construction sphere.
5. The formal ground for allocating subsidies to the territorial road funds is the necessity to equalize public automobile road network capacities in the territory of the Russian Federation. This is a populist argument that can not serve as a basis for allocating subsidies and subventions to the regions.
6. Despite its seeming commercial attractiveness, the expansion of the toll road network in Russia has been very slow so far. The underdeveloped legal background preventing prospective investors from either receiving income or recovering construction costs of roads and infrastructure has hampered active participation of private capital in federal roads constructing.

⁹ See: A. Rodionov, New Facilities – New Risks: Prospects of Investing into Russian Toll Automobile Roads, [in Russian], Kredit Russia, № 17, 2000.

Recommendations

1. Standard expenditure needs on construction, improvement and maintenance of automobile roads can and should form the basis for expenditure planning for individual projects in the road sector (federal road network). However, the total amount of expenditures on the road sector and, consequently, the list of road maintenance etc. projects should be estimated on the basis of funds available from the federal budget for this purpose and national development priorities rather than expenditure needs of the road sector.
2. It is necessary to adhere to a general selection procedure for all investment projects financed from the federal budget. As a first step, the selection procedure for transport investment projects should be unified. The cost-benefit analysis can become one of the methods of project comparison. Officers from the Ministry of Transport and Ministry of Finance responsible for decision-making in the investment sphere should be trained in using this method that should become compulsory for the selection process.
3. Strict budgetary constraints should go hand in hand with clear and distinct prioritizing criteria for road construction projects: degree of availability, project realization effectiveness, national/inter-regional character; for joint federal-regional projects: quality of roads in the relevant region, fulfillment of co-financing liabilities. Such criteria shall be applied when funding is cut and it is necessary to decide whether the project should be continued or laid up.
4. It is necessary to review the principles and mechanism of federal funds allocation for support of the regional road network. The federal government cannot be made responsible for equalizing public automobile road network capacities in the territory of the Russian Federation. (For specific proposals on granting subsidies and grants to the RF subjects see in Section 3.)
5. It is necessary to amend Decision of the Government of the Russian Federation # 973, On the Endorsement of the Provisional Rules for Arranging the Operation of Federal Toll Automobile Roads and Facilities and Provisional Rules for Determining Toll Rates for Travelling along Toll Automobile Roads and Facilities and for Using Collected Tolls in order to lift the restrictions on the way to toll road expansion and attraction of private investments into road construction.

Section 3

Review of Budgetary Expenditures on Road Sector

The main condition for the automobile road network to develop in accordance with the public demand is its steadily growing funding.

Federal Road Service, "Government Strategy of Developing the Automobile Road Network in the Russian Federation"

- 3.1. This Section contains a public expenditure review on the road sector for the period from 1997 to 2001. The choice of the period is conditioned by the information and comparable data available to the authors. Up to 2001 the road sector expenditures were financed from the earmarked budgetary fund, i.e. the Federal Road Fund (FRF), which explains why a considerable portion of the research deals with the analysis of the FRF expenditure effectiveness. From 2001, the road sector has been financed directly from the federal budget. All 2001 data are either planned or estimated. The authors of the Review decided to abstain from those inefficiencies that are caused by unfair practice, abuses and possible corruption and to leave them to the law-enforcement authorities.

Sources of Information

- 3.2. This document has been prepared on the basis of the following materials:
- Report on Performance Results of the Russian Road Agency in 1999
 - Operational Data on Execution of the FRF Budget of 2000
 - Assessment of the Road Sector Expenditures submitted by the Russian Road Agency to the Ministry of Finance for the purposes of the draft budget of 2001 formulation
 - Audit Chamber bulletins for 1998, 1999 and 2000
 - Materials of the Automobile Road Information Center

Most of the above documents were received from the RF Ministry of Finance and the RF Audit Chamber. In spite of numerous requests, the RF Ministry of Transport (Federal Highway Department) provided neither materials nor comments on the issues of this Review by the time of its writing. However, the authors are of the opinion that their efforts have not been in vain since the information available to them is practically the same that the specialists from the Ministry of Finance use when making budgetary estimates on roads. Thus, it was possible to evaluate the degree of necessity and sufficiency of information forwarded to the Ministry of Finance that was used for making reasoned decisions.

Structure of Budgetary Expenditures on the Road Sector

3.3. The resources of the Federal Road Fund were spent on the following earmarked items:

Federal roads:

- maintenance and repairs of the existing federal road network;
- improvement and construction of federal roads and infrastructure;
- acquisition of road machinery and other assets, on a returnable or non-returnable basis, that are necessary for federal automobile roads functioning;
- expenditures of the federal body of executive power on social needs of agencies and organizations of the road sector, on accommodations for federal roads management bodies, road security measures etc.

Regional roads:

- subventions and grants to the RF subjects on development, repairs and maintenance of public automobile roads and on improving rural roads in order for them to meet the standard quality requirement to be included into the public road network;

Other:

- funds directed for national defense, law-enforcement activities and national security.
- FRF reserves.
- balance at the end of the year.

The above list was included practically unchanged into the 2001 federal budget in Section 10, Transport, Road Sector, Communications and Informatics”, as far as road sector expenditures were concerned.

Table 3.1

Execution of the Expenditure Side of the FRF Budget in 1997- 2000 (mln Rb, in relevant year prices)

	1997	1998	1999	2000 (initial version)	2000 (adjusted budget)	2001 (budgetary plan)
Envisaged by budget	27,991.30	21,328.00	28,556.00	30,348.80	53,386.40	48,718/00
Executed	25,247.82	19,979.38	34,122.90	–	56,266.31	

Compiled on the basis of: Report on Performance Results of the Russian Road Agency for 1999, bulletins of the Audit Chamber, Annex 1 to the Federal Law On the Federal Budget of 2001.

On the average, three expenditure items: (1) maintenance and repairs of the federal road network, (2) its improvement and development, and (3) subventions and grants to the RF subjects for the road sector account for about 80% of the FRF's aggregate expenditures. Therefore, these items will be reviewed in the first place for effective execution of the federal budget.

Maintenance and Repairs of Existing Federal Road Network¹⁰

3.4. It is expedient to begin the review of expenditure effectiveness with the maintenance and repairs of the existing federal road network since preservation and improvement of operating condition of automobile roads has been declared as a priority of the road sector and the state body responsible for its management. This is explained by the fact that good maintenance and timely repairs will eventually not only minimize the sector's costs by decreasing expensive repairs but also cut expenses of road users. (Transportation costs go down owing to higher average traffic speed, lower costs of car services, reduced losses caused by lesser number of accidents etc.).

3.5. While taking into account the above factors, the road sector specialists think that a decline in road maintenance and current repair expenditures is inadmissible.

The expenditures are subdivided into the following:

- routine maintenance of federal automobile roads and infrastructure;
- repairs of bridges and conduits that are in unsatisfactory condition;

¹⁰ Maintenance of roads means a range of works carried out during the whole year that includes routine servicing of roads, infrastructure, right-of-way and elements of the road environment, safety traffic measures, prevention and elimination of road deformations and damages in order to maintain roads in good operating condition.

Road repairs envisage a range of works on restoration of operating and technical characteristics of roads, improvement of pavement evenness, enhancement of firmness of pavement surfacing and earthworks, restoration of worn out constructions or replacement thereof with more firm and economical as well as works on road improvement.

- activities aimed at increasing traffic capacity of automobile roads at approaches to big cities and traffic centers by widening roadways within earthwork limits;
- liquidation of rutting, restoration of standard road-holding capacities of pavements;
- traffic safety measures (erection of road fences and signs, roadway marking etc.);
- diagnostic surveys of road and infrastructure condition;
- rights of way engineering works;
- other measures.

Let us have a look at the dynamics of federal road maintenance and repair costs in 1997-2001.

Table 3.2

Federal Roads Maintenance and Repairs Costs in 1997-2000
(mln Rb, in relevant year prices)

	1997	1998	1999	2000 (initial version)	2000 (adjusted version)	2001 (budgetary plan)
Envisaged by budget	6,050.12	6,777.00	9,238.49	10,704.00	14,575.62	12,005.80
Executed	4,028.88	5,398.25	7,603.37	—	13,116.13*	—

Compiled on the basis of: Report on Performance Results of the Russian Road Agency for 1999, bulletins of the Audit Chamber, Annex 1 to the Federal Law On the Federal Budget of 2001.

* Actually, at least 374.9 mln rubles should not be taken into account as that was the sum Rosavtodor owed to suppliers of ice-control salt and road fences. The whole sum was included into the amount of funding of the road sector management bodies that, in their turn, added it to the costs of services paid up by contractors-consignees.

During the specified period, as is evident from the above Table, the Federal Road Fund increased its annually designated amounts for the maintenance and repairs of automobile roads and infrastructure in terms of current prices, in other words, adhered to the “non-reducibility” principle in connection with this expenditure item (the 2001 budget being an exception).

3.6. As far as the FRF expenditure dynamics in comparable prices was concerned, it should be pointed out that only a few price indices on the main road works were available to the authors, hence Table 3.2 could not be presented in comparable prices. However, the adjustment of, e.g., the 1999 expenditures for the 1998 prices on the maintenance of automobile roads and infrastructure shows that there is an absolute decline of the item expenditures from 3,749 mln rubles to 3,703 mln rubles. Deflated road repair expenditures testify that the item expenditures have grown by 6.7% rather than 30%.¹¹

¹¹ According to the 1999 Report of Rosavtodor, the price growth index for road maintenance was 1.27 and for road repairing 1.24 in 1999 as compared with 1998.

- 3.7. The absolute growth of expenditures on maintenance and repairs of the existing federal road network and infrastructure is going on against the background of this item declining share in the total expenditures of the Federal Road Fund (federal budget expenditures on the road sector in 2001).

Table 3.3

Expenditures on Federal Roads Maintenance and Repairs as Percentage of Total Expenditures of the FRF/Federal Budget on Federal Roads

	1997	1998	1999	2000	2001
Appropriated	53	45	48	33	32
Executed	54	41	30*	27	—

Compiled on the basis of: Report on Performance Results of the Russian Road Agency for 1999, bulletins of the Audit Chamber, Annex 1 to the Federal Law On the Federal Budget of 2001.

* Calculated on the basis of data contained in the Audit Chamber bulletins. According to the 1999 Report of Rosavtodor, the federal automobile road maintenance and repairs share in the total expenditures of the FRF was even less, namely 22%.

It is evident from the above Table that there has been a steady decline in the share of these expenditures in total expenditures of the Federal Road Fund during the period under review. This is relevant not only for the planned targets but for the execution figures as well. The problems associated with the determination of budgetary needs in general and of road maintenance and repairs spending in particular, will be considered in detail in Section 4. Here we are going to concentrate on the execution of budgetary appropriations issue.

- 3.8. The decline in road maintenance and repairs expenditures per se does not indicate that roads become worse. Such situation is quite natural for an expanding road network. The international experience demonstrates (see Box 3.1) that the share of these expenditures will start growing once the road network has been formed.
- 3.9. Recently, the budgetary appropriations for maintenance and repairs of the federal road network have not been executed in full.

Table 3.4

Execution of Federal Roads Maintenance and Repairs Budgets as Percentage of Budgetary Appropriations in 1997-2000

1997	1998	1999	2000
66.5	79.6	82.3	89.9

Compiled on the basis of: Report on Performance Results of the Russian Road Agency for 1999, bulletins of the Audit Chamber.

In our view, there are four possible explanations why budget execution figures systematically fail to reach budgetary appropriations: (i) The discrepancy between targeted and actually executed expenditures is determined by the growing economy of road maintenance accompanied by the same qualitative and quantitative parameters. (ii) Planned maintenance and repairs expenditures exceed actual needs. This is caused either by bad planning or purposeful overestimation in order to have ready money reserves. Actually spent amounts reflect real needs of the road sector in maintenance and repairs funds. (iii)

Road maintenance and repairs needs are under-financed; at the same time the priorities that have been set for the sector's development are violated. (iv) A combination of two latter reasons is also possible (some works or roads are under-financed while others receive excessive funding).

Box 3.1

Road Sector Expenditures Correlation in Germany: Main Tendencies

Since the federal road network has been almost formed in Germany, preservation of roads, bridges and other constructions is becoming ever more important. At the stage when construction of new roads is slowing down and the road network is going older, it is inevitable for expenditures on its maintenance and repairs to be growing. The greater share of such expenditures is also explained by more intensive traffic and higher than admissible axle loads. As a result, expenditures on road maintenance are approaching those on new construction.

In a situation when expenditures on road maintenance tend to grow, the Ministry of Transport has to pay more attention to their effectiveness and to look for ways permitting to spend less and to preserve qualitative and quantitative road standards at the same time.

Source: Roads of Germany. Ministry of Transport of the FRG. Bonn, 1995.

- 3.10. The hypothesis on road maintenance processes becoming more economical while the prescribed qualitative and quantitative standards remaining the same is refuted by the dynamics of the road works average unit costs. The average cost of 1km of repaired road grew by 11% in 1999 as compared with 1998 and amounted to 2.1 mln rubles. In the same period the GDP deflator index was 163.3%, which meant that the general price level increased by 63.3%. The 2001 data are provided in the Table below.

Table 3.5

Federal Automobile Roads and Infrastructure: Dynamics of Average Costs

Average costs:	1999	2000	2000 as % of 1999
Per 1 km of federal roads and infrastructure maintenance, thou. Rrbles	76.1	93.7	123.1
Per 1km of federal roads repairs, thou. rubles	2,128.5	4,220.6	198.3
Per 1 running meter of bridges and conduits on federal roads repairs, thou. rubles	37.7	75.2	199.5

Based on bulletins of the Audit Chamber.

The above Table shows a considerable growth of costs of all kinds of works: maintenance of 1 km of roads by **23.5%**, repairs of 1 km of roads by **98.3%**, and repairs of 1 running meter of bridges almost **twice**.

- 3.11. In spite of a considerable price growth, maintenance activities, according to Rosavtodor, embraced 100% of federal automobile roads while 35% of them were repaired (more than in 1999). At the same time repairing works on bridges and bridge constructions were cut. This is a convincing evidence that expenditure needs for road maintenance and repairs were overstated at the time when FDF budgets were formulated.
- 3.12. The third explanation (under-financing of maintenance and repairs) is substantiated by the road sector specialists who claim that funds allocated for these purposes are not enough considering the condition of roads. On condition of federal roads see Box 3.2.
- 3.13. The item by item review of the execution of the budgetary appropriations for 2000 (within the Maintenance and Repairs of the Federal Road Network item) demonstrated that while general expenditure underfinancing took place, there was 10% overfinancing of some federal road maintenance expenditures as well as expenditures on carried over repair works. Thus only 9.1% of diagnostic surveys and 29.8% of environment protection measures were financed as compared with the budgetary appropriations.

Box 3.2

Condition of Russian Federal Automobile Roads

According to the report of the Russian Road Agency, The Assessment of Federal Funds Allocation for Federal Roads Repairs in 2001 (Transport, Road Sector, Communications and Informatics Section), over 50% of the federal road network (24,944.4 km) need repairing. Sixteen percent, or 7.4 thou. km, of federal roads have remaining service life less than 1 year. Further delay with their repairing will considerably increase the costs that would be quite comparable with the costs of new construction and improvement (late repairing can increase the initial construction costs of a facility under repair by 50 – 89%).

The approved Road Repairs Plan for 2001 provides 1,900 mln rubles for these purposes, while the length of road sections to be repaired is 1,067 km, or 4.2% of roads that need such measure.

- 3.14. The analysis of the available documents has demonstrated that the problems with federal road preservation are as topical as ever. There is a direct dependence between the size of expenditures on maintenance and repairs and preservation of roads. According to the assessments contained in the report that General Director of the Russian Road Agency V. Artiukhov made at the enlarged board meeting on February 23, 2000, destruction of roads caused by heavy multi-axle trailers and intensive operation in springtime is in excess of funds allocated for the network rehabilitation. It is assumed that restoration costs of roads destroyed by heavy trailers should be covered by heavy truck use charges. But it is difficult to administrate the collection of these charges: they are collected, though not on all highways, by private companies operating under contracts with the road management authorities. Their collections are barely enough to pay commission fees to such companies. Strangely enough, weight checking is funded from the federal budget (see 3.16).

Charges for Heavy (Diesel) Vehicles

In a number of countries (mostly industrially developed) special charges have been introduced on heavy goods (diesel) vehicles that cause maximum damage to road pavement and the environment. New Zealand and Iceland use weight-distance fee to charge diesel vehicles for usage of roads. A weight-distance fee, the Euro Vignette, is under consideration in the European Union for charging foreign vehicles travelling through member countries. Namibia is planning to introduce such fee in the near future. Norway and Sweden used weight-distance fees until the early 1990s, but have now abolished them.

The basic principle is that all owners/ users of diesel vehicles must buy a license (in New Zealand they are issued in multiples of 1,000 km) graduated according to axle configuration and gross vehicle weight. The charges are administered through sealed hub odometers or other certified distance meters. The charge is lower for vehicles with multiple axles and increases with gross vehicle weight.

The weight-distance fee is administered separately from the general tax system, and all revenues collected from the sale of weight-distance licenses are paid into a special account (New Zealand and Iceland also levy a special charge on gasoline) set aside to support spending on roads.

Weight-distance fees can be difficult to administer. There is a considerable scope for evasion – mainly by understating vehicle weight – unless the sale of licenses can be checked for consistency and linked to an active enforcement program. The system works satisfactorily when it is effectively administered – with fees collected under contract – and vigorously enforced. The scale of problems can be illustrated by New Zealand example. It is estimated that collections and enforcement absorb 3.2 and 2.0% respectively of gross revenues, evasion accounts for about 12% of net revenues, and legal avoidance for 7% of net revenues.

The collection technology is now somewhat dated and a number of countries are planning to wait until electronic systems are available before introducing weight-distance fees.

Source: Institutional Challenges in Financing Road Maintenance. A Review of International Practices Georgia State University, Andrew Young School of Policy Studies (2001).

- 3.15. Expenditures on security measures for federal roads and infrastructure are not included into the Maintenance and Repairs of the Federal Road Network item but are financed out of the Federal Expenditures on the Road Sector. While planning repair expenditures, some additional funds for organizing and operating weight-checking points should be taken into consideration. Since liquidation of damages cause by heavy vehicles account for some 20% of the total repairing costs (see the 1999 Report of Rosavtodor), the effectiveness of one weight-checking point can be estimated. Thus, assessment of security expenditures should be connected with the network repairs costs.

Construction and Improvement of Federal Automobile Roads

- 3.16. This expenditure item is subdivided into the following sub-items:
- Improvement and construction of federal automobile roads and infrastructure;
 - Funding of carried over works on improvement and construction of federal automobile roads and infrastructure including outstanding liabilities payment;

- Allocation of reimbursable funds for acquisition of road construction machinery and equipment to be leased to road sector enterprises;
- Interest in construction of roadside infrastructure facilities;
- Development of modern communications and traffic control on federal roads;
- Insurance of property and insurance against construction risks for federal road improvement and construction projects.

3.17. In the period under review there was an outpacing rise in expenditures on construction and improvement of automobile roads and infrastructure. In 1997 – 2000, the average annual rate of growth of construction and improvement expenditures was 227% while total expenditures of the Federal Road Fund were growing annually at the average rate of 125% and expenditures on road maintenance and repairs – at 148% rate.

Table 3.6

FRF Expenditures (2001 Federal Budget) on Construction and Improvement of Federal Automobile Roads and Infrastructure

(mln Rb.)

	1997	1998	1999	2000 (initially)	2000 (after adjustment)	2001
Appropriated	3,875.49	6,683.00	8,691.30	9,046.36	22,423.34	11,352.20
Executed	2,402.65	6,668.11	16,388.49	–	28,057.68	–

Compiled on the basis of: 2001 materials of the Audit Chamber, Annex 1 to the Federal Law On the Federal Budget of 2001.

As a result, construction and improvement of federal roads and infrastructure has become the major expenditure item for the Federal Road Fund.

Table 3.7

Percentage Share of Federal Roads Construction and Improvement Expenditures in Total Expenditures of the Federal Road Fund/2001 Federal Budget

	1997	1998	1999	2000	2001
Appropriated	34	45	45	51	45
Executed	32	50	64	58	–

Compiled on the basis of: Audit Chamber bulletins, Annex 1 to the Federal Law On the Federal Budget of 2001.

3.18. It is impossible to compare growth rates of road and facilities construction and improvement expenditures and growth rates of volumes of such works expressed in physical units on the basis of statistical publications and reports of Rosavtodor. This is explained by the fact that in some sources they are included into the Federal Roads Commissioning item for a specific period while other refer to them as Volume of

Works carried out in that period.¹² It follows from the bulletins of the Audit Chamber that the road and facilities construction and improvement expenditures grew in 1999 by 245.8% as compared with 1998 (the 1998 financial crisis was also responsible for such results). The volumes of construction and improvement works during the same period increased by 100.5% (roads) and 163.7% (bridges and conduits). In the year 2000, the relevant indicators were as follows: 171% of expenditure growth and 103.5% rise of road construction and improvement works; the scope of construction and improvement of bridges and conduits fell by 40%.

- 3.19. As far as the distribution of the FRF (federal budget) funds between improvement and new constructions projects is concerned, one may say with certainty that the larger portion was directed on improvement projects. Thus, the share of new construction (including pedestrian crossing construction projects) in the total number of improvement and construction projects to be realized in 2001 is 36%. Surely, such fund distribution pattern (if it is repeated from year to year) should impact not so much the expansion as the quality of the federal road network though statistical data are not explicit enough in this respect. Actually, from 1996 to 2000, the length of the federal road network increases by 1.22 thou. km, i.e. by 2.6%, while the changes in public road categorizing demonstrate that the share of roads of the 1st and 2nd categories grew from 41.4% in 1993 to 43.2% in 1997 and to 44.2% in 1999.
- 3.20. At the same time there is evidence that the scope of works that are being performed on federal roads is in excess of financial capacities of the Federal Road Fund. In particular, this can be proved by accruing liabilities, which is one of serious problems on the way to the road sector development. In 1999, the amount of outstanding liabilities to contractors for works performed on federal roads increased 2.5 times and amounted to 4.23 bln rubles, or 35% of the FRF, as of January 1, 1999. The operative data on the 2000 federal budget execution refer outstanding liabilities to expenditures on carried over amounts of federal road and infrastructure construction and improvement works. Under the approved budget of 2000, 3.15 bln rubles were allocated for this purpose but the actual spending was four times greater (13.15 bln rubles) according to the execution report. The 2001 federal budget allocates 3.0 bln rubles, or 10.5% of total road sector expenditures, for repayment of liabilities accumulated in the past. For interdepartmental comparisons and assessment of the problem see Box 3.4.
- 3.21. From the point of view of the state, liabilities have a negative effect because their accumulation takes place without any connection with the development priorities in the road sector and their repayment violates proportions envisaged by a budget law. As far as the road sector is concerned, accruing liabilities lead to further nonpayment and worsening of financial situations of the road sector companies. On the other hand, a number of companies that are stable in financial terms, do have some profit from deferred payments because they allow them to continue works that would not be ordered otherwise and strengthen their monopoly on the market of road construction, improvement and repair contracts. We see that accrued liabilities hinder competition and in fact impose financial barriers blocking other companies entering the road sector.
- 3.22. Outpacing price growth in the road construction and improvement sub-sector as compared with the construction industry as a whole and a sharp rise in costs of 1 km of constructed and repaired road serve as an indirect proof that competition among road

¹² See, e.g., *Facts and Figures on Automobile Roads in Russia at the Turn of the Century* [in Russian], Russian Road Agency, 2000, and the 1999 Report of Rosavtodor.

companies is indeed restricted. According to the State Statistics Committee data quoted in the 1999 Report of Rosavtodor, prices on roadwork are growing quicker than average construction prices. Thus, the average cost of 1 km of improved and constructed federal road was 10.4 mln rubles higher in 1999 as compared with 1998 and amounted to 19.6 mln rubles. It means that the annual growth of construction and improvement of 1 km of roads was 112.5%. The GDP deflator-index in the same period was 163.3%, which means that the general price level increased by 63.3%. The rate of price growth was lower in 2000: the average cost of 1 km of improved and constructed road was 24.3 mln rubles (24% increase).

Overdue Liabilities and Their Impact on the Road Sector

Planned expenditures on repayment of overdue liabilities in the road sector exceed the Payment of Liabilities item for

Energy Ministry – in 2.6 times;
 State Committee on Construction and Housing & Utilities – in 3 times;
 Ministry of Economic Development and Trade – in 7.3 times;
 Ministry of Industry, Science and Technology – in 9.2 times;
 Ministry of Agriculture – in 12.6 times.

As far as the share of expenditures on liability repayment in total expenditures of the relevant industry is concerned, the road sector surpasses all ministries and agencies, the only exclusion being the RF Energy Ministry.

In his Budget Message of 2000 the President of the Russian Federation pointed out that the settlement of overdue liabilities in connection with federal projects (i.e., termination of accrual of new liabilities and repayment of the already present ones) was one of the national priorities. According to some specialists in the road sector, the realization of this objective, provided the total expenditures on the road sector equaled 24.9 bln rubles of which investments accounted for some 9 bln rubles (in accordance with the draft of the Basic Characteristics and Data on Revenues and Expenditures of the Federal Budget in 2001), meant that about 3/4 of major federal road and bridge construction projects would have to be immediately terminated or temporary closed down.

(The 2001 federal budget allocated 28.4 bln rubles for support of the road sector.)

3.23. The reasons for outpacing growth of prices and costs of road construction, improvement and repairing works are as follows:

First. Up to the year 2000, swaps, barter and mutual settlements were a usual practice in the road sector. Thus, in 1999, the Federal Road Fund accumulated commodity resources for 1,750.1 mln rubles under the Provisional Procedure and for 7,900 mln rubles under mutual agreements, the respective shares in the total FRF revenues being 5.3% and 23.8% respectively¹³ (according to Rosavtodor Report). According to the Audit Chamber data, non-cash payment of tax arrears under the Provisional Procedure amounted to 2,659.5 mln rubles. Increase in non-cash settlements made auditing and control more complicated and resulted in discrepancies between reports of the Ministry of Taxation and Rosavtodor. According to some experts, the difference between prices paid in cash and by means of mutual settlements was 40% (*A Research of Some Issues of the Road Sector Financing in the Russian Federation*), while the Audit Chamber estimated the 90% difference. A comparative analysis of prices on equipment obtained in form of commodity recovery performed by the Audit Chamber demonstrated that they were 1.9 times higher than supply prices. In 2000, the Provisional Procedure was substituted with the Provisional Regulations on Material and Technical Support of Road Works. As distinct from the commodity recovery scheme, in this case no contractual

¹³ The Provisional Procedure for Paying Tax Arrears to the RF Federal Road Fund by Enterprises and Organizations provides for arrears settlement by supplying materials, equipment, machinery and other goods, providing services, including transportation, within standard requirement of enterprises and organizations of the road sector that are funded by the FRF, for carrying out road construction, improvement, repair and maintenance works.

obligations arose between Rosavtodor, Ministry of Taxation and regional governments. However, under the new way of tax arrears payment, like in the first case when tax payments were made in material resources, works and services, companies engaged in road works received production from delinquent suppliers that did not suit their construction programs either in terms of quantity or assortment. Audits conducted by the Audit Chamber in 2000 revealed surplus of deliveries over volumes of material resources that were necessary for road works according to material consumption rates. Thus, the average deviation in prices on goods and services (e.g., gasoline, diesel fuel, bitum and reinforcement) delivered under the Provisional Regulations amounted to 20 – 30% as compared with minimum prices of the relevant suppliers.

Second. Another reason for price growing is that active construction and improvement works on roads and infrastructure are not supported by reliable feasibility studies of investment projects (see Box 3.5). Shortcomings in design works and feasibility studies are very often followed by “amendments and field changes of projects after tenders, which results in considerable price growing” (Report of General Director of the Russian Road Agency V. Artiukhov at the enlarged board meeting on February 23, 2000).

Third. There is a probability that construction companies that extract and process nonmetallic materials used in the process of construction and improvement of roads overprice such materials. (It was known that there were companies engaged in extraction and processing nonmetallic materials in the road sector but we could not establish whether they were independent companies or segments of road construction firms.)

Analysis and Selection of Project in the Road Construction Sub-sector

Despite the fact that project analysis has significantly improved and its role in the investment process has raised it still not free from shortcomings determined by a number of reasons:

- Comparatively little experience in investment projects in a market economy;
- Insufficient number of methodological documents in the relevant sector;
- Insufficient funding of project works (in the opinion of specialists).

The above shortcomings can be grouped as follows:

Methodological

- Wrongly chosen criteria for comparison of options;
- Lack of a single approach to evaluation of costs and benefits;
- Lack of comprehensive approach to options under review.

Methodical

- Absence of a single regulatory base for assessments;
- Little attention to dynamic processes;
- Underestimation of risks and information vagueness;
- Underestimation of interests of participants in the investment process.

Organizational

- Insufficient economic research;
- Lack of a single control system of traffic intensity;
- Underfinancing of project works.*

Take, for example, lack of comprehensive approach to options under review. We can refer to the Summary of the Draft Program for Improving and Developing Automobile Roads in the Volga River Region of Russia where it is pointed out that “recent construction projects of large bridges over the Volga River for which considerable funds are directed from the Federal and regional road funds have become a major hindrance to further development of the road network in Volgograd, Saratov and Ulianovsk Oblasts”.

Lack of a single control system of traffic intensity is, for example, manifested by the fact that Summaries of draft programs for further improvement of automobile roads in a number of regions (Central Black Earth, Far East, Urals, Transbaikalia and others) do not include traffic intensity forecasts, which means that this factor is not used for substantiation of new investment projects.

* E.V. Dinghis, A.I. Akulov, op. cit.

- 3.24. One of the reasons for slower price growth in 2000 was connected with spreading of competitive bidding for road construction projects. While realizing Presidential Decree # 305 of April 8, 1997, On Urgent Measures Aimed at Prevention of Corruption and on Cutting Budget Expenditures for Products Purchased for State Purposes, and the Federal Law On Bidding for Contracts on Procurement of Goods, Performance of Works and Provision of Services for State Purposes, the road management authorities organized tenders for road works contracts financed from the Federal Road Fund. Since the issuance of the Decree the number of competitive bidding increased from year to year: 277 in 1997, 987 in 1998 and 1,822 in 1999. Values of lots offered for bidding also raised. Thus, the aggregate value of lots increased 4.3 times and that of awarded contracts 4.2 times as compared with 1998 (Rosavtodor Report for 1999).
- 3.25. The procedure of offering contracts for tenders is determined by the Regulations on Competitive Bidding for Contracts on Road and Infrastructure Construction, Improvement and Maintenance approved by Rosavtodor Order of March 18, 1998. As a

rule, open tenders without pre-qualification were used for the purpose. However, competitive bidding for road contracts financed from the Federal Road Fund has not expanded the contractors market yet. In 1998, there were 2 bidders as an average per tender and 2.6 bidders in 1999.¹⁴ Winners included own structural segments of Kirov Oblast Automobile Roads State Agency and Permavtodor state unitary enterprise within the Road Committee of Perm Oblast Administration. It should also be remembered that when private companies and state unitary enterprises compete for contracts, the latter might find themselves in a better position because part of their expenditures has already been paid from the federal budget (Federal Road Fund). Thus, they are provided, on returnable or not-returnable basis, with road machinery and standard tools.

Table 3.9

Expenditures on Acquisition of Road Machinery and Other Assets Provided on Returnable or Non-returnable Basis from the Federal Road Fund (Federal Budget)

mln Rb.

1997	1998	1999	2000	2001(plan)
123.96	217.22	472.08	188,17	500

Compiled on the basis of: Report on Performance Results of the Russian Road Agency for 1999, bulletins of the Audit Chamber, Annex 1 to the Federal Law On the Federal Budget of 2001.

In 2000, Rosdorlising state unitary enterprise was remitted 93.03 mln rubles and bought 85 ED-405 road-building machines, 5 patching machines and 85 combined machines. The machinery was leased to road management bodies and contractors. The FRF resources amounting to 93.73 mln rubles were directed by Rosavtodor to road management agencies within its jurisdiction for acquisition of road-operating machinery required for federal roads servicing.

Allocation of Subventions and Grants to the RF Subjects for Development, Maintenance and Repairs of Public Roads

- 3.26. The amounts of subventions and grants provided to the RF regions from the federal budget (including the FRF) were as follows:

Table 3.10

Subventions, Subsidies and Grants to RF Subjects

(mln Rb)

	1997	1998	1999	2000 (initial)	2000 (adjusted)	2001
--	------	------	------	----------------	-----------------	------

¹⁴ Calculated on the basis of Rosavtodor Report for 1999. When average numbers of bidders were determined, account was taken of all tenders, not only those for contracts.

Appropriated	16,660.7	6,250.0	9,346.2	9,668.4	9,668.4	20,300.0
Executed	17,875.25	6,30.1	8,46.2	—	7,754.8	—

Compiled on the basis of: bulletins of the Audit Chamber, Annex 1 to the Federal Law On the Federal Budget of 2001.

Subventions, subsidies and grants to the RF subjects for development, repairs and maintenance of public roads were allocated for the following functions:

- Subventions and subsidies provided for construction and improvement of public automobile roads;
- Grants to the RF subjects that do not have enough own resources for repairs and maintenance of public roads;
- Grants to the RF subjects to fund works on improving rural roads in order for them to meet standard quality requirements to be included into the public road network;
- Reserves for funding rehabilitation works on public roads destroyed by natural disasters and technogenetic cataclysms.

3.27. In the reviewed period the distribution of subventions and grants among expenditure functions was rather stable: about 1/3 of all funds were provided for public roads maintenance and repairs including expenditures on rural roads improvement, while the rest of money was directed for construction and improvement of roads. (An exception was made in 2000 when 90% of grants and subventions allocated to the RF subjects for the road sector were used by them on road construction and improvement.) No data were available to the consultants in connection with distribution of the Earmarked Subventions and Grants Fund between road improvement and road construction projects. Judging by the data on physical volumes of regional road construction and improvement works performed as a whole, i.e. works financed from regional road funds and the Road Improvement and Construction Fund, the priority was given to new construction projects though starting from 1999 their growth rates fell behind those of improvement projects (102.1% and 117.5% accordingly).

3.28. In 2000, the FRF allocated 6,956.35 mln rubles for regional public road construction projects while the regional road funds provided only 3,393.47 mln rubles, or 32.8% of the total amount of allocated funds. Consequently, the provision of Article 81 of the Federal Law On the Federal Budget of 2000 on the parity participation of the regions in financing those road projects that were subsidized by the FRF (as a condition of the latter's participation) was not observed.

3.29. The following major problems arise in connection with financing provided by the Federal Road Fund to the RF subjects:

(i) Other than target use of road funds by the RF subjects. Recently (at least from 1995), it has become the usual practice to divert such funds for the following purposes:

- Housing and utilities construction projects,
- Installation of gas services in the regions;
- Repair of sports facilities;
- Sports and fitness events, support of sport teams;
- Repairs of airports and construction of runways;

- Maintenance and repair of roads and infrastructure that are not included into balance sheets of regional road management bodies, and others.

In 1999, 4,015.4 mln rubles were diverted from target use, or 52% of funds allocated in form of subventions and grants from the FRF. As a rule, no sanctions are used for such violations though termination of financing and repayment of earlier subventions are envisaged as a punishment measure. Thus, in 1999 no sanctions at all were against violators. There was a fall in misused funds in 2000 (1,307.5 mln rubles). Meanwhile, Rosavtodor continued its tolerant policy and did not stop remitting funds to misappropriating RF subjects. In case money of regional road funds were used according to their designated purposes, grants for regional road repairing and maintaining could be reduced.

(ii) Sharp deviations of actual financing of the regions under the Subventions and Grants item from amounts approved in the budget. In 1999, the differences ranged from 13% (Chelyabinsk Oblast.) to 219% (Novosibirsk Oblast). The situation in principle, remained the same though the ranges differed: in 1996, the difference between the actually allocated and designated funds ranged from 24.4% to 100%.¹⁵ Road law violations by administrations of the RF subjects had no impact on amounts provided by the FRF; on the contrary, the amounts of allocated subventions and grants even increased sometimes. Thus, in 1999 nine RF subjects misused the FRF funds; at the same time seven of them received more than was envisaged in Article 70 of the Federal Law On the Federal Budget of 1999. Nizhny Novgorod Oblast deviated 66.02 mln rubles in 1998 and used them for maintenance and repairs of city streets and bridges, urban development and repair of runways having received from the FRF 120% more than was approved. Also, as was evident from audit materials of the Audit Chamber, in 1999 – 2000 the FRF, contrary to the established rule, supported those regions where the rates of the road user tax were lower than elsewhere (Chuvash Republic, Republic of Buryatia, Chita, Magadan and Ryazan Oblasts, City of St. Petersburg). According to the Audit Chamber, 19 RF subjects misused road funds in 2000.

- 3.30. Some problems occur when it is necessary to estimate the amount of financing works pertaining to acceptance of the so-called rural roads into the public road network.

These are the roads of organizations and enterprises engaged in agricultural products growing and processing. Also, this category includes roads connecting farm centers with rural settlements. Rural roads belong to collective goods, consequently they should be maintained by such collectives, i.e. agricultural enterprises to whose balance sheets they belong. Indeed, some of them are technological roads that connect rural settlements with brigades, branches of collective farms, state farms, joint-stock companies etc. But on the other hand they function as public roads as well: as they carry suburban buses they are gradually transferred into the public road network. Owing to the fact that technical and operating characteristics of rural roads do not meet the requirements of public automobile roads, considerable financing is necessary to improve them up to the necessary level.

The following works are necessary to improve rural roads:

- Increase of geometrical parameters to satisfy sanitary norms and standards;

¹⁵ Bulletin of the RF Audit Chamber.

- Improved pavement surfacing;
- Improved drainage system;
- Traffic safety measures and facilities.

- 3.31. Financial resources for these purposes are provided to regional road funds in form of subventions and grants allocated to the RF subjects for their road sector support. The problem with rural roads is that there is no reliable information on their condition and even the exact number of them. For example, on New Year's eve in 1995, 1996 and 1997 the length of rural roads increased by 764 km nationwide for some mysterious reasons.¹⁶ Therefore, it is impossible to estimate the exact requirements in financial resources for including rural roads into the public road network and exercise control over purposeful use of such resources. There are discrepancies not only between the State Statistics Committee own estimates but between Rosavtodor's assessments as well. Thus, according to the latter's 1999 Report 42.8 thou. km of rural roads remains outside the public road network. But when it substantiated the size of expenditures on improvements to be made on rural roads to enable them to meet public road standards in 2001 it provided another figure, namely 47 thou. km. The difference in 4.2 thou km will seem significant if we take into account that the 1999 Report and substantiation for resources to be received from the Road Sector Subventions Fund were prepared approximately at the same time, i.e. in 2000.
- 3.32. The process of rural roads acceptance into the network has been going on for several years now. The total length of rural roads decreased by 42.7 thou. km from 1994 to 1999 owing to writing off and transferring into the network. But for the remaining 47 thou. km (according to the data Rosavtodor submitted to the Ministry of Finance) the process will be a lengthy one because it can involve only 3.3% of rural roads annually as this is the percentage financed by the FRF (federal budget) for the purpose in question.¹⁷ That is why it seems very important to find out about the exact length of rural roads and the expediency of their inclusion into the public road network. It should be kept in mind that funds for rural road improvement are allocated to those regions that have no own resources to maintain the already existing regional road network.¹⁸ From our point of view, the rural road acceptance issue should not be treated differently from decision-making issues in connection with construction of regional roads out of federal funds: these should be really very serious arguments to support expansion of road networks in those regions that lack their own means necessary for maintaining road networks since this will not be a lump-sum allocation but a burden on the federal budget during a lengthy period without limitation.
- 3.33. Funds allocated for improvement of rural roads to be able for them to meet the required standards are spent in the same way as subventions and grants provided to the regions

¹⁶ Rosavtodor quotes these facts from the State Statistics Committee's documents (Rosavtodor Report for 1999).

¹⁷ The 1999 FRF budget appropriated 1,191 mln rubles for improving rural roads up to the required standards but the actual execution was 877.7mln rubles. In 2000, Rosavtodor was provided with 1,226 mln rubles for rural road improvement in 2001, which, according to specialists, will be enough to involve in the process slightly more than 3.3%.

¹⁸ In 2000, the FRF provided finances for rural roads improvement to 59 RF subjects. According to the Report on Expenditure Needs of RF Subjects on Maintenance and Repairs of Public Automobile Roads and Infrastructure to be Financed from the Earmarked Road Sector Subsidies Fund in 2001 submitted by Rosavtodor to the Ministry of Finance, 55 regions out of the above will need federal co-financing for road maintenance purposes.

for maintaining and repairing regional roads: they are used to maintain transit streets, improve and construct regional facilities included into the public road network and for reconstruction of federal facilities.

- 3.34. There is one more aspect of the problem in connection with federal spending on rural roads. There is a rather long-standing practice of private funding of construction and maintenance of small local roads in the countryside. Unfortunately there is no reliable statistics in this regard. But it is well known that many country-house cooperatives and associations of gardeners pay for construction of side roads to their land plots. Developers of cottage settlements also use the same practice. Roads constructed by them have gravel pavement or concrete and grouted asphalt revetment. Often, road construction is used as a condition of land allotment. Their maintenance and repairs are also financed by inhabitants of such settlements. These are toll-free roads, often available for public traffic.
- 3.35. Local authorities' position (making land allotment conditional on road construction) seems reasonable. Also, it would be quite wise on the part of local authorities to collect payments from new developers for the right of access to the already existing infrastructure including roads (engineering networks etc.) for the construction of which former residents have already paid (in form of tax payments). If local authorities have the right to demand such payments (preferably not in kilometers of constructed roads but in cash) the burden on governments of all levels will be lessened, as subsidies on rural roads maintenance will be cut. But poor rural roads accounting system constitutes an obstacle to more effective budgetary spending. Presently, the consultants have no knowledge about the future of roads constructed by residents of cottage settlements, whether they will be accepted into local governments' balance sheets or not, whether local governments will demand money for improving them up to the required standards or will they remain "nobody's" roads. Also, nothing is known about government financing of those rural and local roads that are supported by their users. What is clear, nevertheless, is that before starting doing something about such roads their number and length should be determined as well as their users and supporters.

Conclusions

1. Despite the absolute increase in the amount of finances allocated for federal road maintenance and repairs, the majority of them are not in satisfactory conditions. (There is a strong probability that their condition is even worse than is reflected in the Report on Expenditure Needs since the last diagnostic survey of federal roads took place in 1998. Absence of information on changed technical conditions of federal roads makes it difficult to plan target repairs and to evaluate the quality of work. On the other hand, this is also the reason why one should not exclude the possibility of a much better quality of roads than the Report describes.)
2. The use effectiveness of allocated money is decreased by an outrunning (as compared with the general level of prices) growth of prices on road maintenance and repairs and because facilities construction is becoming more expensive.
3. The current practice of estimating financial needs of federal roads and infrastructure maintenance and repairs fails to provide objective results.

4. An equivalent extension of road network and better quality do not accompany considerable increase in federal spending on construction and improvement of roads.
5. The current volumes of construction and improvement works that are under way are in excess of funding capacities of the Federal Road Fund (or of the federal budget in terms of the road sector). There is an ongoing process of outstanding liabilities accumulation. In case they are fully paid, the works on the major portion of the facilities under construction or improvement will be terminated and the facilities will have to be preserved.
6. Liabilities to be paid become a curtailing factor as far as competition among road constructing companies is concerned. Only those of them will stay in business that can cover the differences in payments and expenses from their own resources.
7. Restricted competitiveness as well as the procedure according to which tax arrears to the road funds may be covered by supplies lead to price growth on automobile road construction, improvement and repairs and make road installations more expensive.
8. Active construction and improvement works are carried out in the situation characterized by imperfect feasibility studies and price formation, which leads to considerable differences between the actual and estimated costs of projects.
9. Further development of competitive bidding will curb price growth in the road sector. However, the bidding practices being far from perfect, the average number of bidders per one tender is rather low and state unitary enterprises and the road authorities' own structural subdivisions enjoy various privileges.
10. The consequences of the current system of subvention and grant allocation are as follows:
 - federal funds substitute rather than complement regional funds in the road sector;
 - stimulation is given to those regions that use funds for other than target purposes;
 - regions are not encouraged to seek own resources for capital financing; they do not involve other sectors, industries or funds of individuals in road construction projects.
11. Absence of an effective inventory system of rural roads accepted into the public road network makes it impossible to estimate the amount of subventions and grants to be allocated to the regions for rural roads to meet the standard quality requirements. Rural residents own expenses on road repairing are not taken into account.

Recommendations

1. The expenditure needs for federal road maintenance and repairs and for infrastructure maintenance should be determined on the basis of the following procedures: (i) established average costs of 1 km of federal road maintaining, 1 km of road and 1 running meter of bridges and other facilities repairing should form the baseline for cost planning; (ii) such levels of costs should be adjusted on the annual basis to be reduced by 3-5% in order to provide stimuli to the road authorities to find the most cost-effective way of work organization. We can foresee an objection that inflation and rise of fuel prices will place road agencies in a difficult situation. But the same applies to other spending agencies as well: they also will have the risk of possible losses due to unplanned price growth. We assume that the road sector has not exhausted its reserve of advanced machinery use, for acquisition of which it is planned to spend 500 mln rubles from the budget; also

competitive bidding for procurement of materials and technical and tenders for federal road maintenance and repair resources are planned to take place.

2. The upper limits of divergences between actual and budgeted expenses on repairs, construction and improvement of roads to be reimbursed from the federal budget should be set (e.g., no more than 10%).
3. It is recommended to go on with the competitive bidding process. When considering offers, it should be taken into account that state unitary enterprises can be in a privileged position since their main assets are in part (through leasing) or in full (as a result of free transfer of equipment) funded from the budget. Eventually, free transfer of equipment bought from the federal budget funds should be stopped. Leasing of modern construction machinery should be expanded and made competitive. In order to increase the number of bidders and provide an easier access to construction works for small private companies, it is recommended to subdivide large investment projects into a number of smaller ones. In case small projects are difficult to manage, setting up of consortiums should be encouraged headed by one general contractor.
4. Review the results of the 2001 budget execution with regard to Section 10, Transport, Road Sector, Communications and Informatics, and Item 21, Financial Assistance to Lower Governments, in terms of the road sector support to the RF subjects. The purpose of the review is to examine target use of allocated funds and effectiveness of the budget execution by the Treasury.
5. Adjust/amend the procedure of allocating grants and subsidies to the RF subjects.
6. Financial aid to the regions to support regional road networks should be allocated from two sources: the Fund for Financial Support of Regions and the Regional Development Fund. Since the FFSR resources are provided to equalize fiscal capacities of the regions, in other words, to equalize their abilities to secure a standard (representative) set of expenditure needs (including health care, housing and utilities, education, culture and some other services) it is necessary to change the composition of such set by adding to it the expenditures on maintaining and repairing of the territorial road network. As distinct from other budgetary functions where expenditure needs depend on the number of population, the expenditure needs for road maintenance and repairs should be determined by the length of roads under service (on the basis of maintenance costs of 1 conventional kilometer; this is explained in more detail in Annex 1). The FFSR equalization transfers being not targeted, their spending depends on the priorities set by the legislative assembly of a specific RF subject in the current year. Thus all funds can be spent on the maintenance of runways or schools, for example. At the same time there will be no problem in connection with non-targeted use of allocated funds.
7. For construction and improvement of regional automobile roads money from the Regional Development Fund will be used. Road construction projects will compete not only with one another but with projects of other sectors as well. One of the selection criteria for a road construction project to be funded from the FFSR should be the maintenance quality of the regional road network. Those regions that cannot ensure satisfactory condition of their roads will not be able to rely on new construction project funding.
8. A system of expense accounting (estimation) of individual/private constructors in connection with construction and maintenance of local roads should be developed alongside a mechanism of effective use of funds directed on rural roads maintenance in order to diminish the burdens of the regional and federal budgets (as far as bringing rural roads to the standard quality level is concerned). When funds are allocated for rural roads

to be admitted into regional public road network, the region's ability to maintain its road network from its own funds should be taken into account.

Section 4

Budgetary Process in the Road Sector

- 4.1. Until the year 2001 federal budget expenditures on the road sector were planned by specialists of Rosavtodor (Federal Highway Department of the RF Ministry of Transport) within the financial limits of the Federal Road Fund. In 2001, owing to incorporation of Rosavtodor into the Ministry of Transport, consolidation of the Federal Road Fund's resources in the federal budget and shifting the road financing function to the Treasury for its execution, the budgetary process technology, in terms of the road sector financing, has changed in principle. Thus, the prerequisites have been created for bringing fiscal mechanisms used in the road sector into line with more effective financial mechanisms that have already been introduced into other sectors within the budgetary scope.

A very important new feature characteristic of the 2001 federal budget drafting process is a much closer coordination between the Ministry of Transport (Federal Highway Department) and the Ministry of Economic Development with regard to the road sector expenditure planning. By the time of this Review, the coordination and cooperation technology has not been refined and formalized yet. The consultants have studied it with great attention and recommended some measures for its reforming.

- 4.2. This Section deals with specifics of the federal budget development process with regard to the road sector expenditures that were used by Rosavtodor in the course of 2001 federal budget drafting. While reviewing the financing process in the road sector pursuant to the assignment from the Ministry of Finance, the consultants did not discover among public documents any formalized and officially approved methodology of expenditure planning in the road sector. For this reason they had to reconstruct those approaches to expenditure planning that had been used previously (and were still in use when the Review was prepared) on the basis of the documents available in the line departments of the Ministry of Finance (the Sector Financing Department in the first place). Using the available information, the consultants reviewed the drafting process of the Road Sector subsection of the 2001 federal budget.¹⁹ They also took into account rigid temporal, resource and administrative restrictions imposed on the Federal Highway Department in 2000 as well as the acute methodological problems arising in the course of the road sector budget preparation.
- 4.3. The consultants were not supposed to make a detailed research of the road sector finance (and this should not be a function of the Ministry of Finance or the Ministry of Economic Development as well), since sectoral finances were within the jurisdiction of the chief manager of the federal government's funds, i.e. of the Federal Highway Department of the Ministry of Transport. The consultants inventoried the procedures and

¹⁹ Pursuant to the administrative changes mentioned above the Road Sector subsection first appeared in Section 10, Transport, Road Sector, Communications and Informatics, of the 2001 federal budget. The composition of the main items of the subsection is practically identical to the structure of the FRF budget.

methodological approaches to the process of budget planning and evaluation of effectiveness of budgetary spending on the road sector used by Rosavtodor (Federal Highway Department) in the process of the 2001 federal budget development. Besides that, information flows in connection with budget drafting between the road agency, Ministry of Finance and Ministry of Economic Development were studied. As a result, some procedural and methodological problems of budgetary planning in the road sector have been revealed, the elimination of which will make the financial system of the road sector much more transparent and budgetary spending on the sector more effective.

- 4.4. In order to perform a profound analysis of the problems encountered by the budgetary process in the road sector it is necessary to examine the recently developed approaches to the budgetary planning. This issue becomes even more topical against the background of the problems in the road sector that are still waiting for their decision in spite of the administrative reorganization and other reforms that have been carried out in the sector. Further on two stages of the budgetary planning will be reviewed: (1) during the Federal Road Fund period, and (2) in the current period at the following levels of the budgetary system: (i) federal budget; (ii) regional budget; (iii) municipal budget; (iv) line sections of the federal budget.

Federal Budget Expenditures on the Road Sector Planning Process

- 4.5. The first stage of the history of federal budget expenditure planning on the road sector in Russia covers the period prior to 2001. At this stage the planning process was carried out in connection with the following areas of the budgetary system:
 - the budget of FRF developed by Rosavtodor in form of an earmarked budgetary fund without a detailed item-by-item elaboration of its revenue and expenditure sides;
 - budgets of regional road funds drafted by road authorities of the RF subjects and included into regional budgets as earmarked budgetary funds, as was the case with the FRF;
 - expenses on urban roads within municipal budgets planned by local governments. At the same time, in some municipalities works on roads running through cities and settlements and classified as public roads were financed from higher budgets (FRF and regional road funds);
 - expenditures on rural roads allocated by the FRF (Subventions and Grants to the RF Subjects for Development and Maintenance of Public Automobile Roads item) for improving those of them that were to be included into the public road network as well as latent expenses included into other budget sections, e.g. into Capital Expenditures on Agriculture section.
- 4.6. The expenditure review would be incomplete without examination of the FRF and regional road funds revenue planning methodology. Rosavtodor projected FRF revenues using tax revenue forecasting methods and data from the tax authorities. It also actively administered revenues to the Federal Road Fund. Regional road sector management bodies probably also forecasted revenues to regional road funds in collaboration with tax authorities but, in the opinion of the consultants, were interested in underestimation of expected revenues because the mechanism of FRF assistance did not encourage rise of

own revenues of regional road funds. On the whole, the latter's dependence on the FRF was rather high (see Table 4.1.) though the shares (and absolute values as well) of actual receipts from the FRF in aggregate expenditures on regional public roads were permanently diminishing in 1997-1999. The greatest damage to TRFs revenue planning was done by unpredictable dates and amounts of financial assistance from the FRF.

Table 4.1.

Regional Roads Funding Sources

mln Rb

	1997	1998	1999	2000	2001*
Receipts of regional road funds	48 756	46 705	86 781	No data	103 618
Subventions and grants to RF subjects from FRF (from federal budget in 2001)	17 875	6 830	8 146,1	7 754	20 300
Share of FRF (federal budget) subventions and grants in aggregate expenditures on regional public roads.	26.8 %	12.8 %	8.6 %	...	16.4 %

* Federal Law On the Federal Budget of 2001

4.7. It is difficult to evaluate the role of financial assistance from the FRF (federal budget) in finances of regional road funds owing to the absence of adequate statistics on their revenues and expenditures. Thus, only 50 RF subjects out of 88 provide information on revenues and expenditures of their road funds in reports on regional budget execution submitted to the Ministry of Finance. What is more, this information is presented in an incomprehensive format, which is probably explained by some common software mistake. After the FRF liquidation and consolidation of all its revenues and expenditures in the federal budget, the road sector budgetary planning entered a new stage and started to be carried out along the following directions:

- Federal budget expenditures on Section 10, Transport, Road Sector, Communications and Informatics. – In practice, when the federal budget of 2001 was developed these expenditures were planned on the incremental basis, on the basis of Rosavtodor requests. Accordingly, at that time the road sector budgetary appropriations did not compete with appropriations for the rest of the budgetary functions;
- Federal budget expenditures on assistance to the regional road sectors which also included expenditures on rural roads improvement in order to accept them into the public road network were also formulated on the basis of Rosavtodor requests and were part of Item 21, Financial Assistance to Other Levels of Government. This innovation immediately caused a new problem: how should the amounts of support to be determined and allocated. There was a competition between the following two concepts in the course of the budgetary process: (1) compensation of revenue losses to the regions and (2) allocation of financial assistance in accordance with the needs of regional road networks in funds for their development, maintenance

and repairs. The total amount of federal expenditures on the road sector was the sum of the above items (1) and (2);

- Expenditures of RRFs developed by regional road sector management bodies and included into regional budgets as earmarked budgetary funds. It is planned to annul regional road funds from 2001. Expenditures on urban roads within municipal budgets planned by local governments. – There is a still going on practice in some municipalities to finance from the above budgets (federal and RRF) works on roads running through cities and settlements and classified as public roads.
- 4.8. After the FRF liquidation, the road funds revenue planning was reduced to planning revenues to the regional road funds (until their liquidation scheduled for 2003). Regional road sector management bodies continue to forecast RRF revenues in collaboration with tax authorities and adhere to underestimation of their expected receipts since they are not interested in greater own revenues because of the federal assistance mechanism. The 2001 federal budget appropriates a considerably larger share (and an absolute value as well) of financial support in aggregate expenditures on regional public roads.
- 4.9. Federal road sector expenditure planning should provide answers to the following very important questions: (i) How much is it going to be spent on the national public road network (in absolute values or in terms of road expenditures ratio to the GDP/expenditure side of the federal budget)? (ii) How much is it going to be spent on the federal road sector and on financial assistance to the regions (support of regional public roads)? (iii) How are appropriations on the federal road sector to be allocated within it?
- 4.10. For obvious reasons planning approaches prior to the FRF liquidation in 2001 and after it, when financing is carried out directly from the federal budget, should be different.
- 4.11. In the period of the Federal Road Fund (up to 2001) the aggregate amount (share) of the federal budget expenditures on the road sector was implicitly determined beforehand by way of assigning certain taxes and revenues to the Federal Road Fund. Then the structure of its expenditures was determined on the basis of collected amounts. Very often the investment function won the upper hand in competition with the other expenditure functions (road maintenance, financial assistance to regional road funds etc.).
- 4.12. Though the budgetary process in 2000 took place in different conditions as was mentioned several times before (see Item 4.2), the 2001 federal budget was drafted in accordance with established rules. The expenditure substantiation submitted to the Ministry of Finance viewed the following expenditures of different kinds and directions as a single whole: (i) on federal automobile roads, (ii) on regional road sector support, and (iii) capital expenditures on the road sector (later federal investments into road projects were included into the federal investment program).
- 4.13. Actually, the road sector expenditure planning was carried out by extrapolating the expenditures of 2000 (thus, as far as investment expenditures were concerned, the Draft Federal Budget Expenditures on the Road Sector in 2001 pointed out that Rosavtodor “oriented on keeping the road sector investment possibilities approximately within the scope of the year 2000”) with certain adjustments for the estimated inflation rate. There was no question about the effectiveness of the historically established expenditure pattern or the necessity of its changing.
- 4.14. Since the revenue side of the FRF was replenished mostly at the expense of turnover taxes, the Fund’s size and, consequently, its expenditures on the road sector changed

(increased) with the economy growth. At the same time there was no mechanism to adjust the size/relative amount of expenditures on the road sector to their effectiveness precisely because those revenues were directed to the earmarked fund. Actually, there was no efficient feedback mechanism as well, i.e. between the road sector financing and economic growth: a large portion of payers to the Federal Road Fund were economic entities (Gazprom, oil companies) using pipeline, railroad and sea transport, apart from the road transport.

- 4.15. The necessity to review the mechanism of the road sector financing became obvious in 2000 when the actual amount of tax collections was in considerable excess of those planned to the FRF and the federal budget. The unplanned revenues of the consolidated federal budget were redistributed among its prioritized expenditure items following a broad discussion in which the Government and State Duma took part. But additional revenues of the FRF were directed to cover the road sector expenditures without any discussion on the efficiency of such step.
- 4.16. After the FRF consolidation in the federal budget was completed by 2001, the shortcomings of the methodological background of the current road sector expenditure planning became obvious.
- 4.17. Provided below is a detailed review of the practices used for the development and substantiation of the federal budget expenditures on the Transport, Road Sector, Communications and Informatics item based on the drafting of the 2001 federal budget. As a result, some shortcomings of these practices are revealed and new approaches to the federal budget road sector expenditures planning are suggested.
- 4.18. The Proposals on the Road Sector Financing to the Draft Federal Budget for 2001 developed by Rosavtodor (hereinafter the Proposals) with the attached Explanatory Note that included (i) a short Analysis of the Road Sector Situation (the Analysis) and (ii) the Draft Federal Budget Expenditures on the Road Sector in 2001 (the Draft Expenditures) were presented to the Ministry of Finance.
- 4.19. The Proposals were prepared in accordance with the Budgetary Message of the RF President to the RF Federal Assembly, On the Budgetary Policy in 2001 and for Medium Term, and were based on the document developed by the Ministry of Finance, The Main Characteristics and Data on Revenues and Expenditures of the 2001 Federal Budget (# 01-AK/47, submitted to the RF Government on May 29, 2000). The Proposals took into account new tax and budgetary features in connection with the road sector envisaged by those documents including the following:
 - abolition of the FRF and transfer of part of the relevant revenues and expenditures to the federal budget to be treated in accordance with standard terms and be fully controlled by the Treasury;
 - financing of expenditures on the federal road sector (construction, improvement, repair and maintenance of federal public automobile roads that were financed until present from the FRF) under Section 10 of the federal budget, Transport, Road Sector, Communications and Informatics;
 - allocation of subsidies and subventions for the regional road sector within the Financial Assistance to Other Levels of Government (federal budget Item) provided that receipts of regional road funds will not be below the estimated execution level of their budgets in 2000. Accordingly, only expenditures on federal public roads were fully consolidated into the federal budget, while subsidies to the regions are still

indicated as a separate budget line which, in its turn, provides some stable revenues to regional road funds.

4.20. A number of goals contained in the Proposals concerned the specifics of the road sector financing (its extremely non-transparent nature and significant outstanding liabilities). The following goals were formulated:

- Achievement of transparency, clarity and greater efficiency of expenditures on the road sector. - This goal, important for all expenditure functions, was extremely topical for the road sector that was lacking transparency for a number of reasons: the FRF was very reluctant to provide any information on its activities, it did not use any Treasury practices etc.;
- cessation of accruing liabilities and gradual payment thereof. – This goal is also universal in its nature but it should be remembered that the road sector has an extremely large number of outstanding liabilities (see Section 3).

4.21. The Proposals (the Analysis section) substantiated the necessity of government support to the road sector, provided reasons for such support and, in fact, formulated the goals of the government policy in terms of the road sector:

- the Proposals postulated that a reliable and developed road network was a sine qua non for guaranteeing the basic constitutional rights to the Russian citizens; they stated that there was “an inseparable connection between the support of federalism, ... national security and geopolitical interests of Russia” and the condition and level of development of national automobile roads. That is why the Analysis paid special attention to the main automobile roads connecting the Russian regions among themselves, the Russian ports with freight-concentrating points and traffic centers and constituting parts of international transit routs. The Analysis emphasized the priority of the federal road network development and pointed out that while representing only 5% of the total length of Russian roads it accounted for over 50% of automobile transportation work (mileage, freight, passenger and foreign trade turnover) carried out by automobiles belonging to enterprises, organizations and population (including almost 100% of services in connection with international trade). According to the Analysis that factor accompanied by truck and car fleet explosion resulted in a poor traffic capacity, especially in the vicinity of the main traffic centers. The inevitable conclusion to be drawn from such reasoning was the necessity of prioritized construction and improvement of federal roads;
- the Proposals paid attention to insufficient density of the road network and lack of hard-surface approaches to 40,000 settlements. To amend the situation, it was proposed to increase the length of hard-surface roads to 1.5 mln km at least (i.e. twice), in other words, to build mostly regional roads. Section 2 of the review deals in detail with the argument for expansion of regional roads;
- it was pointed out that investments in the road sector had a positive influence on related industries, regional development and employment (the multiplication effect of the road sector spending was discussed in Section 2).

4.22. Even from the above list of goals substantiating the necessity of government support to the road sector it is clear that they represent alternative approaches to the sector's development. It is impossible to prioritize both federal and regional public roads development and at the same time to provide for connections with tiny rural settlements. The same applies to the relevant financing as well.

- 4.23. The above options are not arranged in accordance with their importance. What is more, some very important spending functions, such as repair and maintenance of automobile roads, are not mentioned in the Analysis section at all.
- 4.24. The Draft Federal Budget Expenditures on the Road Sector in 2001 pointed out that Rosavtodor when “formulating the road sector investment program for 2001 proceeded from the inventory results and assessment of expenditure effectiveness on the road projects being realized in the current year”. At the same time there were no references to the inventory results and assessments of expenditure effectiveness. Also, no documents (if any) with such information were attached to the Explanatory Note.
- 4.25. The Draft Expenditures document contains a more detailed list of the road sector development goals. Thus, the construction and improvement priorities include the following:
- higher technical level of existing federal roads;
 - development of automobile routes;
 - completion of the main road network to liquidate regional isolation, especially in the Siberia and Far East;
 - creation of the international road network and its integration into the European and Asian international road systems;
 - realization of decisions of the RF Government regarding social and economic development and government support of the RF subjects;
 - harmonization of the national transportation system by providing access to the most important freight-concentrating points and locations;
 - gradual reduction of the number of settlements having no hard-surface links with the main road network;
 - rapid completion of projects under construction (this priority has no straightforward formulation but the consultants decided to formulate it as a separate item in view of its great importance).
- 4.26. Rosavtodor priorities in road and infrastructure repairing and maintaining in 2001 are as follows:
- obligatory minimum of expenditure functions required for technical reasons: seasonal (including winter season) maintenance of roads, repair of bridges, conduits etc. in emergency condition;
 - priority financing of repairing and maintaining works for road preservation and better operation;
 - furthering of ecological and traffic safety by liquidating emergency sources and better transportation and operational condition of roads.
- 4.27. As can be seen, the list of priorities developed by Rosavtodor, though somewhat enlarged as compared with that of the road sector goals envisaged in the Analysis, to a great extent coincides with it (at least as far as road construction is concerned). There is still no streamlined hierarchy of priorities and that is the reason why their review does not allow to estimate the size and structure of expenditures on the road sector.

- 4.28. The most serious methodological shortcoming of the analytical approach that forms the basis of the Proposals is that the major factors do not include the following items:
- the macroeconomic situation that determines forecasts of freight and passenger flows, traffic intensiveness etc., i.e. data received as a result of direct monitoring of transportation and operational condition of roads and traffic safety and flow;
 - inventory results and expenditure efficiency review with regard to road projects under realization.
- 4.29. An equally serious shortcoming, in the opinion of the consultants, is that politically important goals declared in the Analysis document: strengthening of federalism (development of federal road network), social equity (development of rural road network) and equalization of economic development levels of the regions (support of regional roads) do not form a harmonious system. Besides, Rosavtodor limited itself to formulating general (long-term) goals but failed to develop priorities for the planned period taking into account the specifics of the current situation and did not propose any method to estimate needs in federal financing of these priorities.
- 4.30. In the opinion of the consultants, these shortcomings should be overcome in future when federal budgets are drafted and for this purpose the approach to the budgetary planning used in 2000/2001 (starting with formulating global goals) should be complemented with identifying objectives for the planned year on the basis of the current specifics.
- 4.31. The reviewed Proposals allow us to make a conclusion that expenditure planning in terms of the road sector is based on the program principle. Indeed, before 2001 the Roads of Russia program determined operations in the road sector (at least formally). In 2001 it is going to be replaced by the Roads of Russia of the 21st Century program approved at the sitting of the RF Government. Actually, the program approach is used formally as is evidenced by the fact that Rosavtodor fails to comply with the government's demand to annually review and adjust outdated provisions of the program.
- 4.32. In practice all kinds of road works financed from the federal budget until 2001 had the following pattern:
- per project planning of roadwork. - Rosavtodor specialists identified projects using nontransparent criteria and in accordance with secret procedure;
 - annual plans approved and title lists of all **major** works made;
 - designing estimates analyzed (examined, coordinated and approved). A full analysis of budgets and projects is difficult owing to incomplete and outdated regulations and their incompatibility discussed in greater detail elsewhere in this Report;
 - competitive bidding organized and carried out. Shortcomings of its organization are discussed in more detail in other sections of the Report;
 - contract agreements concluded and monitored;
 - completed construction projects accepted (according to the established procedures of control over the volume and quality of works performed);
 - production and financial control procedures envisaged by the current legislation executed. Up to now it was difficult to carry out control over performance of

contract agreements and acceptance of works, to perform current and following financial control due to non-application of Treasury practices and combination of administrative and managerial functions.

4.33. The consultants recommend to reform the federal budget expenditure planning process with regard to the road sector in accordance with the following principles:

- separate planning of expenditures on the following functions: (1) maintenance (including repair) of federal public roads; (2) improvement and construction (within the framework of the government investment program), and (3) financial support to the regions;
- amount of expenditures on current maintenance (including repairs) of federal public roads are to be determined on the basis of non-reducible expenditures on maintenance (as per length), on repairs (on the basis of their condition monitoring results), maintenance of newly constructed (improved) roads and facilities etc. in accordance with approved standards. Current spending may become more effective if cut annually;
- expenditures on road improvement and construction are to be determined as follows: investment projects are to be developed on the basis of macroeconomic forecasts and monitoring of traffic utilized capacity and accident rate; these projects will be selected alongside other investment projects in various sectors and included into the government investment program upon approval;
- expenditures on financial support to the regions are to be planned according to the FFSR directions and methodology (current expenditures) and the Regional Development Fund (capital expenditures and expenditures on improving rural roads).

Aggregate FRF Revenues Elasticity of Individual Road Sector Expenditure Functions

4.34. To substantiate the aggregate amount of expenditures on the road sector in 2001, Rosavtodor submitted to the Ministry of Finance the draft of The Road Sector subsection as part of Section 10, Transport, Road Sector, Communications and Informatics, of the 2001 federal budget. It presented the road sector expenditures subdivided into expenditure functions (items) where the total amount of expenditures on the federal road sector were 24.9 billion rubles while the total expenditures on the road sector as a whole (including regional roads) were 125-130 billion rubles. Attached to the draft document was a memorandum entitled Issues of the 2001 Federal Budget Execution with Regard to the Road Sector Financing. The memorandum included two forecast options for the road sector expenditure structure in 2001 depending on the total amount of such expenditures (125 or 130 billion rubles). Thus, it reflects the opinion of Rosavtodor specialists on the priorities of various spending functions within the road sector.

Table 4.2

Maximum and Minimum Options of Road Sector Expenditures Forecasts in 2001 Proposed by Rosavtodor

(bln Rb)

	2000 r. (initial budget version)	2000 r. (actual executio n)	2001 r. (forecast, max option)	2001 r. (forecast, min option)	Comments of Rosavtodor specialists
Total expenditures on road sector, of which			125.0	127.0- 130.0	Contractors proceed from 140.0 bln Rb of aggregate financing of the road sector.
- federal roads, of which	30.3	50.4	24.9	12.0 - 15.0	In case of radical expenditure cuts, it is proposed to reduce construction program by 10 bln Rb since maintenance spending cannot be diminished.
- improvement and construction			(including 9 bln Rb of investment s)	(including 5 bln Rb of investment s)	
- repairs and maintenance					
- payment of outstanding liabilities			6.0 – 7.0	5.0	Max option: ¾ of construction projects will be laid up. Min option: all construction options will be laid up.
- regional roads			100.1*	115.0**	

Source: RF Ministry of Transport

* According to Rosavtodor forecast submitted to the Ministry of Finance, regional road funds will have 105.8 bln Rb of own revenues (without subsidies).

** The same document points out that in case on new tax legislation own revenues will amount to 103.6 bln Rb.

4.35. Rosavtodor specialists propose to keep the same amount of expenditures on repairs and maintenance of federal roads in case of lesser appropriations for the road sector and to start with cutting expenditures on road construction and improvement.

4.36. Let us have a look at the previous practice of Rosavtodor. For this purpose we shall calculate aggregate FRF revenues elasticity coefficients of individual expenditure functions. The consultants used data on planned and actual FRF expenditures (less expenditures on social sphere and material stimulation). Since deviations of actual amount of expenditures from planned expenditures are connected with deviations of FRF collected revenues from the planned ones, we can substitute aggregate expenditures for aggregate revenues.²⁰

4.37. **Let us consider the following two cases:**

First case (1997). Actual FRF expenditures were below the planned ones.

²⁰ All calculations were made on the basis of bulletins of the Audit Chamber provided in Section 3.

The aggregate FRF revenue elasticity coefficient of the road maintenance and repair function was equal 4. In other words, the decrease of aggregate expenditures (as compared with the planned) by 1% caused a 4% decline in the actual maintenance and repairs expenditures on federal roads as compared with the plan.

In case of construction and improvement of federal roads, the elasticity coefficient was 4.7, i.e. 1% decline in actual aggregate expenditures on the road sector was followed by 4.7% decrease of actual expenditures on construction and improvement as compared with the planned ones.

The elasticity of expenditures on grants and subventions to the RF subjects equaled (-0.7). That is, when aggregate expenditures declined by 1% as compared with the planned, actual expenditures on grants and subventions rose 0.7% as compared with the planned.

Second case (2000). Actual expenditures (and revenues) of the FRF considerably exceeded the planned.

The road maintenance and repair expenditures elasticity was 0.37.

The construction and improvement expenditures elasticity was 10.2.

The subventions and grants expenditures elasticity was (-2,35).

The aggregate FRF revenue elasticity coefficient of expenditures on construction and improvement of federal roads is the highest among the road sector expenditure functions. Their elasticity increases in case of aggregate revenue growth and declines in case of their fall, i.e. they grow much faster when additional revenues appear than fall when the FRF collections are below the plan.

- 4.38. In case of expenditures on federal road maintenance we have a different picture. They are little affected by additional revenues but are much more sensitive to cuts in actual revenues as compared with the planned. One would not worry about low elasticity of expenditures on repairs and maintenance in case of additional revenues should the planned amounts were enough for all standard repairs and maintenance works. Unfortunately, this is not the case (see Section 3). What is worse, expenditures on repairs and maintenance demonstrate high elasticity when actual FRF revenues fall as compared with the planned ones. And this is in contradiction to Rosavtodor's statement that such expenditures are not cut down.
- 4.39. A different situation arises with grants and subventions. It seems that the negative elasticity coefficient can be explained as follows. In 2000, actual FRF revenues were much higher than planned. Probably, revenues of regional road funds were also high and therefore subventions and grants from the federal budget were cut. On the contrary, when the FRF collected less than planned, regional road funds also received fewer revenues and their need in subventions and grants rose. Thus, subventions and grants from the federal budget served as a buffer for regional road funds.

Expenditure Planning within the Road Sector

- 4.40. The process of budget developing for 2001 (even with due consideration given to specifics of the budgetary process in 2000) makes it possible for the consultants to analyze the budgetary planning practices with regard to the amounts and structure of

expenditure functions/types (construction and improvement, repair and maintenance, subsidies and grants to regional road funds) within the Road Sector subsection.

4.41. During the 2001 federal budget development process, Rosavtodor prepared and submitted to the Ministry of Finance the following documents:

Explanatory Note to the 2001 Draft Federal Budget. Transport, Road Sector, Communications and Informatics section.

Assessment of the Revenue Side of the Russian Federation Road Funds Budget for 2001 (under Current Tax Legislation).

Projected Volume of Federal Financing of Road Works in 2001. Acquisition of Road Machinery and Other Assets Necessary for Federal Automobile Roads Operation and Maintenance on Returnable or Not-returnable Basis (Standard Equipment and Tools of State Unitary Enterprises).

Assessment of Road User Fee Collected to the RF FRF in 2001 (at 0.5% Rate).

Forecast of the Revenue Part of Budgets of Regional Road Funds of the RF Subjects for 2001. Annex 3.

Assessment of the Revenue Part of the RF Budget Generated from Non-tax Revenues Directed for Government Support of the Road Sector in 2001.

Assessment of Expenditures on Financing Federal Roads and Infrastructure Repair, Improvement and Construction Projects Executed in Previous Fiscal Periods with Involvement of the IBRD Loans for 2001 (PRM and PRSAD projects, IBRD Loans 3706 RU and 3990 RU).

Assessment of Other Current Expenditures on Federal Automobile Road Management Funding.

Assessment of Expenditures on Maintenance and Repairs of Federal Road Infrastructure (with attached tables Expenditures on Repair/Maintenance of Federal Road Infrastructure from Federal Budget Item: Transport, Road Sector, Communications and Informatics, in 2001 (roads)).

Substantiation of Funds Allocation on Federal Roads and Infrastructure Construction and Improvement in 2001.

Assessment of Federal Funds Allocation for Federal Roads Maintenance.

Assessment of Federal Funds Allocation for Federal Roads Repairs in 2001.

Draft Federal Budget Expenditures on the Road Sector in 2001 (in accordance with the departmental expenditure structure of the federal budget).

Memorandum: Issues of 2001 Federal Budget Execution with Regard to the Road Sector Financing

Substantiation of the Necessity for Road Machinery and Equipment Acquisition in 2001.

Formation of the Revenue Side of the Russian Federation Road Funds Budget for 2000.

Directions of the RF FRF Use (Annex 25 to the Federal Law On the Federal Budget of 2000).

Assessment of Subventions on Improvement and Construction of Public Automobile Roads and Infrastructure in the RF Subjects Allocated from the Road Sector Earmarked Subvention Fund for 2001.

Substantiation of Funds Allocation on Regional Public Automobile Roads of the RF Subjects in 2001 (Road Sector Earmarked Subvention Fund section).

Substantiation of Funds Allocation from the Road Sector Earmarked Subvention Fund for Improving Rural Roads to Meet Quality Standards.

Substantiation of Funds Allocation on Repairing Regional Public Automobile Roads of the RF Subjects in 2001 (Road Sector Earmarked Subvention Fund).

Assessment of Funds Allocation from the Road Sector Earmarked Subvention Fund for Other Current Management Expenses on Regional Public Automobile Roads of the RF Subjects in 2001.

Assessment of Funds Allocation on Repairs and Maintenance of Infrastructure on Regional Public Automobile Roads of the RF Subjects in 2001 (Road Sector Earmarked Subvention Fund).

Expenditures of the Regional Road Funds of the RF Subjects in 2001.

Federal Budget Drafting Practices with Regard to the Road Sector Expenditures Used for the 2001 Federal Budget Development and the FRF Budgetary Estimation Practices Used by the Federal Road Fund.

Federal Budget Financing Projections for Road Works.

The most important of the above documents are reviewed below.

- 4.42. Substantiation of Funds Allocation on Federal Roads and Infrastructure Construction and Improvement. The Substantiation document submitted to the Ministry of Finance for the federal budget drafts does not contain full information that is necessary for managerial decision-making. It includes the estimated costs of the project, its financing during the year and commissioning information (km of roads and running meters of bridges and other constructions). However, construction projects have long production cycles. To evaluate projects, data on the planned volume of works during a year are required as well as information about those works that have already been funded and those that need funding for each year.
- 4.43. Assessment of expenditures on maintenance and repairs of federal automobile roads. According to the document submitted by the Russian Road Agency: The Assessment of Federal Funds Allocation for Federal Roads Repairs in 2001 (Transport, Road Sector, Communications and Informatics Section), over 50% of the federal road network (24,944.4 km) need repairing. Sixteen percent, or over 7.4 thou. km, of federal roads have remaining service life less than 1 year. In the opinion of Rosavtodor specialists, further delay with their repairing will considerably increase the costs that would be quite comparable with the costs of new construction and improvement. When the Road Repairs Plan for 2001 was formulated, 1,900 mln rubles were allocated for these purposes, while the length of road sections to be repaired would be 1,067 km, or 4.2% of roads that needed such measure.
- 4.44. The consultants reviewed the assessments of expenditures on maintenance and repairs of federal roads in 2001 prepared by Rosavtodor, the purpose of the review being as follows: (i) to determine whether the planned amounts reflect objective needs of the road sector in financing this function, and (ii) whether the Ministry of Finance, when formulating the federal budget, will be able to check the validity of requested amounts.
- 4.45. Assessment of expenditures on road maintenance. As a rule, road maintenance works do not require design documentation and are carried out on the basis of discrepancy lists and

cost estimates. As was noted in the Assessment of Federal Funds Allocation for Federal Roads Repairs in 2001, Rosavtodor specialists, when determining maintenance costs of automobile roads, used the Technological Resources Calculation Models of Standard Maintenance Costs for Federal Automobile Roads. It is presumed that these models must ensure: (i) estimation of work costs in current (forecasted) prices in terms of both major indicators (automobile roads types and categories) and individual works, and (ii) determine cost-of-work indices relative a certain basic level.

4.46. According to Rosavtodor estimations, 4 bln Rb are needed for road maintenance (including funds for uneven surface treatment). In its opinion, this will be enough for “admissible” level of federal road maintenance and for “high” maintenance level on the main roads, though the terms “admissible” and “high” are not explained. Also, no data on per unit maintenance costs for both options are provided. The document suggests no forecasts of possible price changes and their influence on road maintenance costs.

4.47. At the same time Rosavtodor points out that the allocated funds will not cover the following works:

- marking of pavement surfacing;
- erecting road fences;
- setting road signs;
- consolidating roadsides;
- planting snow shelter belts etc.

4.48. Consequently, Rosavtodor did not plan to allocate funds for road improvement works and traffic safety at the time of budget formulation and the upper limits of funding for federal road maintenance being estimated, thus damaging the road sector priorities. As the Assessment document provides no standards obtained from using the model, it is impossible to check how expenditure needs have been determined and funds distributed among federal roads.

4.49. In order to evaluate the information capacity of the data contained in the Assessment document the consultants did the following:

- calculated the average maintenance costs of 1 km of roads in all regions without the appreciation factor on the basis of expenditure need of all roads and their length;
- subdivided all the roads into “expensive” (maintenance costs per 1 km higher than national average) and “cheap” (maintenance costs per 1 km below the average).

4.50. The consultants assumed that the “expensive” category would include roads in the northern regions, territories with compound relief etc. (No account was taken of road categories since the Assessment document did not subdivide federal roads into them. Anyway, this factor did not have much impact because almost 90% of federal roads belong to the 2nd and 3rd categories.) As a result, the “expensive” category embraced not only roads in Sakhalin, Krasnoyarsk Krai, Khanty-Mansi AO but also in Nizhny Novgorod, Pskov, Kaluga and Saratov Oblasts. At the same time roads of Volgograd Oblast, the neighbor of Saratov Oblast, were included into the “cheap” category. The latter also contained roads in Irkutsk Oblast, Yamal-Nenets AO, Republic of Yakutia (Sakha) and Altai. (For a more detailed analysis and its results see Annex 3.) The results

of the analysis proved that the current planning procedure was not fit for determining federal road maintenance expenditure needs.

- 4.51. Assessment of federal funds allocation for federal roads repairs. - To assess the expenditure needs on road repairs the following data were used: (i) length of roads needing repairs, and (ii) repairs costs according to design estimates.
- 4.52. Information on the length of roads needing repairs is obtained as a result of diagnostics surveys. In 2000, 4.08 mln rubles, or 9.1%, were spent for the purposes instead of 45 mln rubles appropriated in the FRF budget.²¹ Is it possible that diagnostics works in the road sector are carried out without funding?
- 4.53. Costs of repairs works are estimated in accordance with properly developed design estimates (DE) submitted by federal roads management authorities. Control over price formation factors in the road sector is mostly administrative (appreciation indices, overheads and estimated profit rates etc.). At the same time the following indicators are not used for DE development for the purposes of repairing, construction or improvement:
- single lists of expenses due to reimbursement by the customer;
 - single upper limits of overheads and planned profits to be paid by the customer;
 - single upper standard rate of 1 working hour (day).
- 4.54. This causes significant differentiation in repair costs of 1 km of roads in different regions (alongside climatic, geological and other factors). Thus, the Assessment of Federal Funds Allocation for Federal Roads Repairs in 2001 deals with those road sectors that do not meet quality standards in terms of strength, evenness and road-holding capacity. We may assume that such segments need similar repairs. At the same time the repair costs of 1 km range from 3.33 mln rubles (Uprdor Moscow-Nizhny Novgorod) to 1.4 mln rubles (Pribaikailie Uprdor). Probably, this could be explained by different categories of roads but no information is available on this point. Therefore we cannot decide whether the former roads funding is overestimated or whether the latter's is underestimated.
- 4.55. Therefore, it is advisable to attach to the expenditure assessments submitted to the Ministry of Finance the rates on repairing works carried out on roads of different categories and information on the types of road networks. In this case it will be possible to check the amounts under request though the problem will remain since the way in which costs of road works are determined now is no longer relevant in the opinion of the road sector specialists. Prices on construction materials are based on the system of estimated standards that is reviewed every 5 - 10 years, the latest revisions made in 1969, 1984 and 1991.
- 4.56. Assessment of Funds Allocation on Other Current Expenditures on Federal Automobile Road Management. - This Assessment document fails to address the following problem: in 2000, the FRF administered its own taxes (and had the relevant expenditure item in its budget) but after the road tax collection function was transferred to the Ministry of Taxation, the Ministry of Transport was still provided with the necessary funds for this function. Thus, tax administration money can be saved and the appropriate item deleted from the road sector management expenditures.

²¹ RF Audit Chamber materials.

- 4.57. Substantiation of the Necessity for Road Machinery and Equipment Acquisition. - The document substantiating expenditures on acquisition of road machinery (and other assets necessary for federal roads maintenance) provided on returnable and non-returnable basis (standard equipment and instruments of state unitary enterprises) does not contain data on previously made expenditures under this item. Neither are there any assessments of objective needs in machinery and equipment. No information is provided on refunds from using equipment that was transferred earlier. Therefore, we can assume that expenditures on acquisition of machinery and equipment are highly elastic.
- 4.58. Assessment of Funds Allocation from the Road Sector Earmarked Subvention Fund. The current system of planning and assessing expenditures on regional roads financed from the Road Sector Earmarked Subvention Fund has the following distinguishing features.
- 4.59. When expenditures on regional road construction and improvement are assessed no information is given on financial inputs of each RF subject into such projects and on their investments already made. It is impossible therefore to evaluate the stimulation effect of the current co-financing system making regions to contribute capitals from the regional road funds.
- 4.60. Rosavtodor used the following method to assess expenditures on maintenance and repairs of regional public roads. First, it estimated costs for repairs and maintenance of roads and bridges in 2001 across regions on the basis of the length of regional road networks and standard costs. The result was compared with estimated revenues of the regional road funds in 2001. In case of a deficit the latter was covered from the Road Sector Earmarked Subvention Fund. The total amount to be covered from them was to be transferred to the regional road funds for regional road maintenance and repairs.
- 4.61. There were great doubts about the accurateness of those estimates in view of the following:
- (i) The arrears expected to be accrued by January 1, 2001 were not taken into account (they were shifted to the regional road funds).
 - (ii) There were great discrepancies in expenditure assessments submitted to the Ministry of Finance (probably at different times). Thus, according to the first document Rosavtodor estimated expenditures on repairs and maintenance of roads and bridges in 2001 at 49.3 bln rubles (on the basis of technical standards). According to the second document it was necessary to allocate 69.3 bln rubles in 2001 for repairs of automobile public roads in the RF subjects. This time the estimations were made in accordance with the Regional Norms of Pavement Surfacing and Topping Service Life Between Repairs. It turned out that lesser volume of works needed more financing.
- 4.62. Since the document under review did not provide either standards used by its developers or subdivision of regional roads into categories the consultants tried to evaluate its accurateness on the basis of indirect information. For this purpose a procedure was applied to maintenance expenditure needs of regional roads similar to that used for federal roads.
- 4.63. On the basis of data contained in the Substantiation of Funds Allocation from the Road Sector Earmarked Subvention Fund on Roads and Bridges Maintenance in 2001, the average cost of repairs and maintenance of 1 km of regional public roads was calculated. Those regions that needed more funds on repairs and maintenance of 1 km than the regional average fell in the "expensive" category while those with the costs below the average level belonged to the "cheap" category. A comparison of regions included into these categories brought the same results as was the case with federal roads: a number of

regions with the same climatic, geographic etc. conditions found themselves in different groups. For example, Kemerovo Oblast had very “expensive” roads and the neighboring Tomsk Oblast “cheap”, roads were “expensive” in Republic of Komi and “cheap” in Arkhangelsk Oblast, etc.

- 4.64. The resulting distribution was compared with the federal roads distribution (in terms of 1 km of maintenance costs). It was kept in mind that deviation of the federal road maintenance costs in a specific region from the average costs was influenced by the same factors as in case with regional roads in the same region (costs of roadwork, list of works etc.) and that maintenance costs of 1 km of federal roads were hardly higher than the costs of repairs and maintenance of regional roads in the same region since federal roads, as a rule, were more “expensive” than regional and maintenance costs of the former were higher.
- 4.65. The “expensive” group of regional roads included Yamal-Nenets AO, Sverdlovsk Oblast, Evenk AO, Chelyabinsk Oblast, Astrakhan Oblast, and Republic of Sakha (Yakutia) while the federal roads in these regions belonged to the “cheap” group.
- 4.66. Even more interesting results were brought by the regression model where regional roads maintenance and repairs expenditure needs were evaluated depending on the lengths of roads in various regions (without appreciating factors) and compared with the expenditure needs given in the expenditure assessment document (see Annex 3). Thus, in Yamal-Nenets AO the planned expenditure needs were 4 time more than those predicted by the regression model while in the neighboring Khanty-Mansi AO where the road technical parameters, operating conditions and prices were similar and the share of hard-surface roads was even greater the expenditure needs were only twice as much as those predicted by the model (the appreciation factors being approximately the same). Also, there was no difference in price deviations for federal and regional roads in Khanty-Mansi AO. We may conclude that the expenditure amounts assessed for Yamal-Nenets AO on maintenance and repairs of regional roads are in excess of the standard.
- 4.67. According to the current practice the amount of subventions due to the RF subjects depends not only on their expenditure needs on repairs and maintenance of roads but also on estimated revenues to their respective regional road funds. Therefore, they can receive more funds both by overestimating their expenditure needs and by underestimating future revenues.
- 4.68. Revenue estimation of the regional road funds for 2001 performed on the basis of the regression model that was built using the Statistics Committee data on added value generated in the regions in 1998 and its further comparison with the data in the Assessment document demonstrated that some RF subjects underestimated their road funds revenues (see Annex 3). Among those were regions with overestimated (as compared with the estimates) expenditure needs on road maintenance and repairs. The latter included Republic of Tatarstan, Republic of Yakutia (Sakha), Kemerovo and Samara Oblasts, Yamal-Nenets AO and others. In other words, one cannot exclude the possibility of revenue understatement and expenditure needs overstatement on the part of those regions though, of course, one cannot be 100% sure of this.
- 4.69. There are various reasons urging the regions to get greater subventions: saving current expenses and applying them differently, uneven inflows of funds, attempts to guarantee a certain minimum of funds. (For instance, Chelyabinsk Oblast overestimated its expenditure needs and underestimated its estimated revenues to the regional road fund. Such behavior was probably caused by the fact that in 1999 it received just 13% of

subventions appropriated in the FRF budget for its road sector.) Therefore, one may assume with a high degree of probability that the system of subvention assessment, distribution and execution of budgetary appropriations is not effective on the whole.

- 4.70. Absence of a single identification system for investment projects to be financed from the federal government. - This issue has become very urgent in view of liquidation of the Federal Road Fund and shifting to federal road financing directly from the federal budget. One of the main arguments in favor of greater financing of the road sector is that this will create a multiplication effect promoting the general economic growth. That issue was discussed in Section 2. We would only note here that sectoral differences in investment projecting hinder the comparison process of project effectiveness and the multiplication effect in particular.
- 4.71. Another problem arises in connection with this, i.e. absence of public discussion of major investment projects and priorities funded from the federal budget. Negative public opinion on major projects, doubts and suspicions in their connection are an inevitable consequence of such non-transparent practices. The scandal associated with the Moscow ring road is a prominent example illustrating the problem. What is more, the project reviewing and discussing procedure is kept in secret in Rosavtodor itself. No projects are discussed at its board or sectoral meetings.

Production Supervision and Financial Control

- 4.72. At present a system of inside and outside control has been established responsible for targeted use of budgetary funds and effective budgetary spending in the road sector. The following divisions of Avtodor exercised control over expenditures of the FRF: Financial Control and Audit Directorate, Center for Production Supervision and Financial Control in the Road Sector and regional automobile road management offices. The Ministry of Finance, Ministry of Taxation and the RF Audit Chamber carried out external auditing of targeted and effective use of the FRF resources in accordance with the National Audit Program.
- 4.73. In 2000, the departmental control bodies conducted 192 general and single-issue audits with regard to targeted and effective use of the FRF resources in 89 road sector management bodies. Out of these, 15 audits were carried out in conjunction with the Ministry of Finance, 10 with the Ministry of Taxation and 5 with the Audit Chamber. The main violations revealed were in connection with non-purposeful use of the FRF resources, payment for performed road works into accounts of third parties-legal entities that had no contracts with the road sector management bodies, violations of production discipline in the road sector management bodies, competitive bidding practices and contractual agreements and procurement contracts outside tenders.
- 4.74. The main concern of the above audits was to reveal violations in targeted use of budgetary funds. Information on them was provided to the heads of administrations of the RF subjects, directors of enterprises and organizations. The following measures included replacement of officials guilty of violations, reprimands and internal investigations. However, as a rule no reimbursements of misused funds were made.
- 4.75. In most cases production control is carried out by Rosavtodor itself. It has a functioning system of roadwork quality control (road construction materials, road diagnostic surveys, construction, improvement, repairs and maintenance of roads) which is the responsibility of the Laboratory Control and Certification Center in conjunction with the road sector management bodies, federal road directorates, thoroughfares management bodies and

construction project directorates. The directorate responsible for estimates and price formation monitors on a monthly basis regional prices on road construction products and estimates price dynamics. The Competitive Bidding, Tenders and Contracts Directorate controls tender rules compliance. The Economy, Comprehensive Planning and Budget Directorate reviews reports on roadwork performance and use of road funds resources.

Conclusions

1. Incorporation of the Russian Road Agency into the Ministry of Transport, consolidation of the Federal Road Fund resources in the federal budget and shift of the road financing function to the Treasury for its execution have created by 2001 the prerequisites for improving the budgetary process in the road sector, increasing the quality of budget planning and control over its execution, creating effective and transparent interacting mechanism for the participants in the budgetary process, in the first place for the Federal Highway Department, Ministry of Transport, Ministry of Finance and Ministry of Economic Development of Russia.
3. The current budget planning methodological support in the road sector does not correspond to the radical changes that have taken place. Actually, when the federal budget of 2001 was drafted the aggregate expenditures on the road sector were estimated by extrapolating the expenditures in the year 2000 (adjusted for inflation). The sector's expenditure needs were determined without taking into account the political priorities and economic goals and without analyzing alternative options.
6. The methodology of expenditure needs determination in various areas of the road sector that was used in the process of formulation of the federal budget of 2001 did not provide for drafting realistic and controllable plans. The assessments of the expenditure needs provided to the Ministry of Finance and the Ministry of Economic Development of Russia did not allow them to verify the validity of fund allocation for current and capital expenditures.
7. The methodology used to measure the road sector expenditure needs of the RF subjects and the amount of subventions and grants from the federal budget had significant shortcomings that were responsible for lower effectiveness of budgetary spending in the road sector.
8. The budgetary process in the road sector does not ensure open, transparent and efficient spending and the prerequisites for accumulation of overdue liabilities are preserved. In particular, it is necessary to supply the Ministry of Finance with a more detailed information on finances of state unitary enterprises and extra-budgetary incomes of enterprises and organizations in the road sector.
9. The current systems of outside and inside monitoring and control have failed insofar to establish a relationship between the budgetary and quality control and to provide the budget spending efficiency control, which is testified by the fact of more expensive construction works, growing prices on goods supplied by delinquent enterprises, violation of work schedules (in particular, regarding projects involving loans from the International Bank for Reconstruction and Development) and poor quality of works performed in the road sector.

Recommendations

1. The consultants recommend to reform the federal budget expenditure planning process with regard to the road sector in accordance with the following principles:

- separate planning of expenditures on the following functions: (1) maintenance (including repair) of federal public roads; (2) improvement and construction (within the framework of the government investment program), and (3) financial support to the regions;
- amount of expenditures on current maintenance (including repairs) of federal public roads are to be determined by the Federal Highway Department and coordinated with the Ministry of Finance on the basis of non-reducible expenditures on road maintenance (as per length), on repairs of emergency facilities (on the basis of their condition monitoring results), maintenance of newly constructed (improved) roads and facilities etc. in accordance with approved standards and adjusted for inflation. Current spending may become more effective if cut annually by 3-5%, as assigned by the Ministry of Finance, provided the quality level remains at the same level;
- expenditures on road improvement and construction are to be determined as follows: investment projects are to be developed on the basis of macroeconomic forecasts and monitoring of traffic utilized capacity and accident rate; these projects will be developed by the Federal Highway Department to be selected alongside other investment projects in various sectors in accordance with the standard procedure and included into the government earmarked investment program upon approval;
- expenditures on financial support to the regions are to be planned according to the Ministry of Finance (together with the Federal Highway Department) directions and methodology (current expenditures) and the Regional Development Fund (capital expenditures and expenditures on improving rural roads);
- the total amount of planned expenditures on the road sector will be the sum of the above items (plus administrative, machinery procurement etc. expenses) adjusted by the Ministry of Finance on the basis of forecasted level of non-interest expenditures of the federal budget.

2. Annual inventories and evaluation of the federal budget expenditure effectiveness in the road sector should become an inseparable part of the budgeting process.

3. In order to check whether expenditures on the road sector are justified, the Ministry of Finance should request from the Federal Highway Department of the Ministry of Transport additional information (for Request Forms see Annex 4) concerning federal roads maintenance, federal automobile roads repairs and construction and improvement of roads; also requests should be made on outstanding expenditures on individual investment projects.

4. Prior to the liquidation of the territorial road funds (that is, at least for the purposes of federal budget of 2002 drafting) the Ministry of Finance should be responsible for their revenue forecasting on the basis of information on the sales tax revenues during the previous 2 or 3 years across the regions to be received from the Ministry of Taxation.

6. When planning the sizes of subventions on construction and improvement of regional public roads, expenditure needs will be determined on the basis of the same scheme as on construction and improvement of federal roads. It is recommended to subdivide the item “Funded as of the end of planned year” into two sub-items: “from federal budget (FRF)” and “from regional budgets (regional road funds)”. The last item, “Funding” should be similarly subdivided.
7. While planning expenditures on improving rural roads for them to be able to meet quality standards it is necessary to take into account Regional Road Funds Saving programs that are adopted by the RF regions and the Program of Accepting Rural Roads into the Public Road Network.
8. In addition to the justification of expenditures submitted by the Federal Highway Department to the Ministry of Finance it is advisable to provide repairs standards for various road categories used for calculations together with information on the network lengths by types of roads. Thus, it will be possible to verify the grounds for requested amounts though the problem will remain because the current procedure for estimating costs of road works does not correspond to modern conditions and is based on the obsolete system of estimated standards, while the current practice of planning expenses on federal roads and infrastructure maintenance and repairs does not determine the exact amount of expenditure needs and gives rise to excessive funding of some roads to the detriment of others.
9. To be able to provide a reliable assessment of the financial situation of the road sector, the Ministry of Finance should receive the following detailed information: (1) on financial standing of state unitary enterprises in the road sector, including information on use of profit and depreciation deductions, and (2) on off-budget incomes of enterprises and organizations in the road sector.
10. External control should cover the quality of road works and project effectiveness in the road construction sphere. Quality control should go hand in hand with control over effective budgetary spending. Public associations of automobile road users should also be involved in road works quality control.
11. The results of external quality control should be used for planning expenditure allocation for road maintenance and selecting automobile road and infrastructure improvement and construction projects.

Section 5

Budgetary Expenditure Policy in the Road Sector: Main Components for Greater Effectiveness

- 5.1. The Concept of the Budgetary Expenditure Policy developed in accordance with the Action Plan of the RF Government in the sphere of social policy and modernization of the economy in 2000 – 2001 names seven ways) to improve the budgetary process (these seven policy components are called “directions”). Systematic efforts along these lines will increase the effectiveness of budgetary expenditures in the road sector as well.
- 5.2. The first direction envisaged by the Concept comprises a complex of measures designed to provide full financial coverage of responsibilities assumed by the federal, regional and local governments and an inventory of all budgetary responsibilities, namely federal mandates, especially in the social sphere. Most of federal mandates do not apply to the road sector directly; however is very important for the sector that the government provides funding of all its responsibilities. As was noted in Section 3 above, one of the main obstacles to further development of the road sector are accruing liabilities caused by untimely fulfillment of responsibilities on the part of the government. The outstanding liabilities to road sector organizations have accrued to such an extent that their fulfillment may cause temporary closure of most road construction projects. Thus an inventory of all government funding responsibilities regarding capital and current expenditures in the road sector would be indeed very useful.²²
- 5.3. The second objective of the budgetary policy aims at transition to program-oriented budgeting. The Concept recommends developing and introducing the system of budget funds allocation among programs of various departments. The national transportation system will benefit a great deal from shifting to the program-oriented method of budgetary planning. The review of the situation in the road sector as well as in other transportation sectors has demonstrated that at present road sector programs are weakly coordinated with programs in other sectors and are not integrated into the single program for the transportation system development that should support the program of social and economic development of the regions.²³ However, there is a high potential for more effective budgetary spending through using earmarked program budgetary planning in the road sector itself. The current practice of financing creates situations when commencement and completion dates of road construction/ improvement projects are not coordinated and as a result individual road sections, when completed, lead nowhere or construction works

²² Let us consider the government debt to the companies that procure ice-control salt and road fences. In 2000 Rosavtodor failed to fulfill its payment liabilities with regard to shipments though entered the relevant sums into the FRF expenses. In March 2001, Rosavtodor prepared agreements to the appropriate general contracts made between the producers and consignee contractors. Under the agreements, the contractors assumed the rights and obligations of Rosavtodor regarding payments for products received by them from the producers. Clause 3 in the agreements said that payment for products received in 2000 would be made by the contractor from the federal budget within the funding limits. *Source: RF Audit Camber Report on Results of Auditing the Use of the Federal Road Fund Resources in 2000.*

²³ Ideally, road construction projects should be coordinated with communications, gasification, power-and-heat supply and other such like projects.

on individual road segments involve considerable resources and hinder the road network development in the region as a whole (see, e.g., Section 3, Box 3.5).

- 5.4. It seems that the road sector is more fit for competitive principles of project identification than social sectors because transportation projects costs and results, if their social aspects are not taken into account, can be compared. Some practices in this field already exist (see Section 2). The purpose of transportation projects should be to secure cargo flows that are necessary for realization of other social and economic programs (estimates of load growth in transportation system in connection with program realization). The shift to the program-oriented budgeting will to a great degree curtail the influence of the transportation lobby on the amounts of state orders in the sector.
- 5.5. Medium-term planning, with its fixed sources and volumes of financing for several years in advance, is an absolute necessity for road construction projects that are extremely capital and time intensive because in this way under-financing and accrual of liabilities can be avoided. Also, medium-term budgeting will make the project identification process in the road construction and improvement area more substantiated, in particular, assessment will be taken of additional burden to be borne by the budget in connection with maintenance of newly built road segments. Future maintenance expenditures should also be considered when rural roads are accepted into the public road network. Right now the federal budget provides funds to the regions for the necessary improvement of rural roads and later it will have to subsidize their maintenance because many regions lack own funds to keep their road networks in a decent condition. Therefore the Ministry of Finance, while planning capital expenditures, will need not only general financing data on road construction projects broken down by years but also information on future maintenance costs of road sectors that will have been built before the completion of the whole project. Besides, the seasonal nature of roadwork should be also considered when estimating current costs in the road sector. And this, in its turn, means that expenditure planning should be made on the quarterly basis.
- 5.6. The third direction of making budgetary expenditures more effective is connected with further improvement of government and municipal procurement methods. It is obvious that competitive bidding for contracts is necessary for the road sector because the larger portion of its contracts is financed from the federal budget. Positive influence of competitive bidding was already felt in 2000. One of its impacts was a slower price growth in road construction. However, there is much that can be done in this field to make easier the access of smaller construction companies into the sector and to increase competitiveness. One of such measures may be the encouragement of consortiums of small companies headed by a single general contractor.
- 5.7. The fourth objective of the budgetary policy concerns reforms in the sphere of state and municipal unitary enterprises, government agencies and budgetary institutions. This is a very prominent direction of activity for the road sector since the delineation of the public (budgetary) and private sectors has not been completed in it. (i) The management and economic functions are not separated, and (ii) assets (machinery and equipment) are transferred to state enterprises participating in tenders. Unfortunately, the consultants were unable to review the problem in greater detail, as no information was available to them on the activity of state unitary enterprises in the road sector. But the evident priority in this respect would be to make an inventory of budgetary institutions and enterprises in the road sector economic complex to be followed by privatization of most economic entities.
- 5.8. The fifth direction of the budgetary process reform is concerned with improvement of accounting and reporting practices. It is proposed to recognize as fully as possible

operations with budgetary and non-budgetary resources of not only state and municipal budgetary institutions and organizations but of government unitary enterprises as well and to add transparency to the process of profit and depreciation accumulation and use at state enterprises. One of the necessary steps to be taken for this purpose is to verify (and present in greater detail, if necessary) the budgetary classification.

- 5.9. The sixth group of measures includes establishment of objective criteria for funds appropriation. While not denying the principle of per capita financing proposed in the Concept underlying the practice of rendering public and municipal services in accordance with the number of service consumers, it is necessary to point out that it cannot be applied to a number of budgetary functions. Thus the given principle can hardly be used for estimating expenditure needs on maintenance and repairs of regional roads. In contrast to other budgetary functions, whose expenditure needs are determined in accordance with population numbers, expenditure needs on road maintenance and repairs depend on the length, technical characteristics and condition of the road network (based on the maintenance costs of 1 conventional km of roads).
- 5.10. The seventh and the last direction is the improvement of the Treasury execution and control mechanisms in connection with spending of budget funds at the federal level and the use of financial support on public road development, maintenance and repairs allocated to the regions (budgets of regional road funds, in case they are not liquidated as envisaged, will be executed by the Treasury).
- 5.11. At the federal level, the introduction of Treasury practices will make possible, in principle, the following: (i) non-targeted use of funds; (ii) minimize overspending in excess of estimated costs; (iii) settle the problem of accruing liabilities by organizing control over budgetary obligations and registration of contracts on roadwork. At the moment, another problem of the road sector in the regions, apart from the above, is connected with collection of non-cash revenues into regional road funds, which is just another argument in favor of the Treasury execution of their budgets (until their liquidation).
- 5.12. The problem of non-targeted use of grants and subsidies provided to the regions from the federal budget to support their road sector can be solved not so much by shifting to the budget execution by the Treasury as by reforming the whole system of grants and subsidies for regional road networks when the regions will not receive earmarked funds for regional roads but instead the mechanism of equalization transfers from the FFSR will be used for the purpose.
- 5.13. As far as the targeted use of budgetary funds is concerned, the Treasury execution will remedy this problem with regard to organizations that are financed from the budget but at the same time are earning revenues from extra-budgetary sources. There are quite a few of such organizations in the road sector at the federal and regional levels. But the main objective relative to such organizations and state enterprises operating in the road sector (see above for the fourth direction of the Concept) is to cut considerably their number and to transfer them to the private sector. One of the mechanisms for their voluntary shifting there should be a decline in budgetary funding and a wider practice of competitive bidding. Therefore the Treasury scope of control over targeted use of funds will shrink in the future. But in those spheres where it will remain (in particular, control over purposeful use of funds of organizations responsible for placing government orders on road construction and maintenance) it should go hand in hand with the quality control over project realization.